

Operating Instructions

Electronic Pan and Tilt Drive FL52
230V 50/60Hz



Date	Name	Reason for the change
07/2018	Operating Instructions FL52 Operating Instructions WISKA Edition 2.0	Final Version
08/2018	Operating Instructions FL52 Operating Instructions WISKA Edition 2.1	Correction remarks
08/2018	Operating Instructions FL52 Operating Instructions WISKA Edition 2.2	Correction RCU
08/2018	Operating Instructions FL52 Operating Instructions WISKA Edition 2.3	New schematic, correction of references

Table of contents

1	About these Operating Instructions.....	1-1
1.1	Structure and Purpose of these Operating Instructions	1-1
1.2	Users and Target Groups	1-1
1.3	Additional Documents / Supplier Documents.....	1-1
1.4	Safety Information	1-2
1.4.1	Standard safety information.....	1-2
2	For your safety	2-1
2.1	General safety information	2-1
2.1.1	Safety information structure.....	2-2
2.1.2	Embedded safety information.....	2-3
2.2	Warranty	2-3
2.3	EMC.....	2-3
2.4	User	2-3
2.5	Qualification of users.....	2-3
2.5.1	Qualification of the technical personel.....	2-4
2.6	Hazardous areas and danger points.....	2-4
2.7	Protective devices	2-4
2.8	Label und symbols	2-5
2.9	Personal safety equipment.....	2-6
3	Technical description.....	3-1
3.1	Product overview.....	3-1
3.2	Technical components	3-2
3.2.1	FL52.....	3-2
4	Installation	4-4
4.1	Transport and lifting.....	4-4
4.2	Mechanical installation	4-5
4.2.1	Checking the postion of the limit switches	4-6
4.3	Electrical installation.....	4-6
5	Commissioning	5-1
6	Operation	6-1

Table of contents

6.1	General operation.....	6-1
6.1.1	Switch on and operation.....	6-1
6.1.2	Switch off	6-2
7	Troubleshooting.....	7-1
8	Servicing.....	8-1
8.1	Maintenance.....	8-2
8.2	Repairs.....	8-3
8.2.1	Removal/ installation of parts of the FL52.....	8-4
8.2.2	O-Ring cover.....	8-5
8.2.3	Rubber seal in the E-room of the lower housing.....	8-7
8.2.4	Motor plate Tilt (V) 230 VAC.....	8-9
8.2.5	Motor Unit Tilt (V) 230 VAC.....	8-14
8.2.6	Pan gear wheel (H)	8-19
8.2.7	E-Circuit Board 230 VAC.....	8-25
8.2.8	Motor Unit Pan	8-30
8.2.9	Internal Control Cable	8-34
8.2.10	Limit Switch Unit Tilt (V)	8-40
8.2.11	Limit Switch Pan (H).....	8-45
8.2.12	Limit Switch Tilt (V)	8-49
8.3	Cleaning.....	8-52
9	Spare parts	9-1
9.1	Pan and tilt drive / Remote control unit RCU	9-1
10	Disposal and decommissioning.....	10-1
10.1	Disposal	10-1
10.2	Decommissioning	10-1
10.3	Storage	10-2
11	Technical data	11-1
11.1	Technical data.....	11-1
11.2	Typkey	11-2
11.3	Typ label	11-2
11.4	Protection class.....	11-3
11.5	Dimensions	11-3

Table of contents

11.5.1	Pan and tilt drive FL52	11-3
11.5.2	FL52 Dimension Sheet.....	11-4
11.6	Electrical connection diagram.....	11-5
11.6.1	Circuit diagram E-Gear FL52-230V	11-5
12	Supplier documentation and certificates.....	12-1
12.1	CE Declaration of Conformity	12-1
13	Keyword index.....	1

Table of abbreviations and Acronyms

Table of Abbreviations and Acronyms

DIN	German institute for standardisation
DIN EN ISO 12100	Safety of Engines
EN	European Standard
FL	(Remote Control)
IP 23	International Protection: Vertically dripping water shall have no harmful effect when the enclosure is tilted at an angle of 15° from its normal position. A total of four positions are tested within two axes.
IP 56	International Protection Water projected by a nozzle (6.3 mm) against enclosure from any direction shall have no harmful effects.
ISO	International Organisation for Standardisation
RCU	Remote Control Unit
VDE	Association of Electrical, Electronic and Information Technology
WISKA	Company Label <u>W</u> asserdichte <u>I</u> nsolier <u>s</u> toffgekapselte <u>K</u> abelarmaturen (Waterproof encapsulated insulating material cable fittings)

1 About these Operating Instructions

1.1 Structure and Purpose of these Operating Instructions

This manual is intended for the personnel responsible for the installation, operation and maintenance of the purchased product.

The operating instructions are logically divided into the chapters to be used for each product life cycle.

1.2 Users and Target Groups

Any person using the product must follow the safety and handling instructions given in this manual to ensure safe operation of the product.

Every person must have been instructed in the product and have read and understood the contents of these operating instructions.

Work on the product without the help of these instructions is not permitted.

1.3 Additional Documents / Supplier Documents

The documents of the suppliers, which are included in this product, are listed in chapter 12 Supplier documentation and certificates.



NOTE

NOTE!

Read the operating instructions carefully before use.
Storage for future reference.

1.4 Safety Information

1.4.1 Standard safety information

The safety instructions for WISKA has been created according to the SAFE principle and is derived from the residual risk and hazard assessment:

- **Keyword**
The keyword reflects the severity of the immediate hazard (hazard, warning, please note, note, information).
- **Type and source of the hazard**
The type and source of the hazard comes from standard DIN EN ISO 12100.
- **Consequences**
Indicates the possible consequences of non-compliance.
- **Avoidance and/or prevention**
The options for avoiding and/or preventing hazards are listed here.



HAZARD

Type and source of the hazard

Consequences that arise from this hazard
Avoiding and preventing the hazard.

2 For your safety

2.1 General safety information

When operating/working on WISKA products, the following general safety information applies:

- Read the operating instruction completely before operating the product or working on it to prevent hazard for yourself and /or the product.
- Only qualified electricians may perform work on the product.
- Disconnect the electrical system from mains and secure it against switching on again.
- Do not modify the products yourself. The resulting hazards are unpredictable.
- Unauthorized modifications nullify the operating licence and warranty of the product.
- Only use original spare parts obtained from WISKA.
- Make sure that the installation position is accessible.
- Always follow all safety information that is listed in these operating instructions.
- When working on and installing the product, follow all national and in house rules/regulations regarding the product.
- Make sure that national regulations for the use of work are followed.
- Any additional information signs on the device must be observed.

2.1.1 Safety information structure

The chapter Safety and Warning information describes the structure and application of that information. A warning message regarding the situation to be avoided is indicated for each hazardous situation.



HAZARD	
	Hazards indicates a dangerous situation that, if not avoided, could lead to immediate death.
WARNING	
	Warning indicates a dangerous situation that, if not avoided, could lead to death or severe injury.
CAUTION	
	Caution indicates a hazard with low level of risk that, if not avoided, could lead to minor or moderate personal injuries
ATTENTION/NOTE	
	Attention indicates the possibility of material damage for the product and its function. Note serves for general information and optimizing the procedure.

2.1.2 Embedded safety information

In order to not greatly interrupt the flow when reading the described actions, embedded safety information for procedural actions is also used. It looks like following:

1. Take ...
 2. Remove...
 3. Disconnect...
 4. Remove....
- ✓ The assembly is removed.

2.2 Warranty

WISKA-products are subject to a statutory warranty according to German and EU law. For more information, please see the generally applicable terms and conditions.

Please contact WISKA Service regarding any defect of your product.

2.3 EMC

The Electromagnetic Compatibility Regulation 2014/30/EU regulates the influence of technical devices among each other. Electromagnetic compatibility means the ability of equipment to operate satisfactorily in its electromagnetic environment without causing electromagnetic interference itself, which would be unacceptable to other equipment in the same environment.

2.4 User

It is fundamentally important, that the user who will be using, operating, servicing or installing the product be properly trained and instructed on said product.

2.5 Qualification of users

The user must have read the documentation in its entirety and have understood it in order to understand the association of the individual components and the operation of the product.

2.5.1 Qualification of the technical personnel

Technical personnel must have the proper level of training that allows them to make mechanical connections and test the function.

According to VDE, an electrician is required to connect the electrical components.

2.6 Hazardous areas and danger points








Hazardous areas and/or danger points include among others:

- Connection chamber for electrical connections
- Connection pieces and cable inlets





2.7 Protective devices

No dangers that affect the operator are known for this product.

2.8 Label und symbols

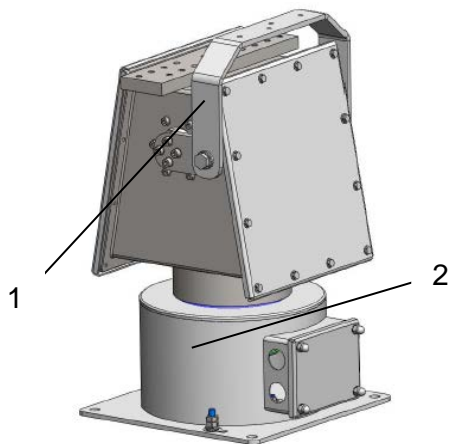
Symbols	Meaning	Use
	Hazard symbol Warns of an immediate danger.	Safety information and warning information
	Hazard symbol Warns of an electrical hazard.	Safety information and warning information
	Hazard symbol Warns about suspended loads when working above the head.	Safety information and warning information
	Mandatory action sign For maintenance disconnect from mains.	Safety information and warning information
	Mandatory action sign Connect an earth terminal.	Safety information and warning information
	Mandatory action sign Consult operating instructions.	Safety information and warning information
	Information An electrician is required for installation.	Safety information and warning information

2.9 Personal safety equipment

Symbols	Meaning
	Safety helmet Must always be worn when suspended loads are in the work area.
	Work clothes Must always be worn to protect the body from external influences.
	Safety gloves Must always be worn to protect the hands from external influences.
	Safety shoes Must be worn in the work area.

3 Technical description

3.1 Product overview



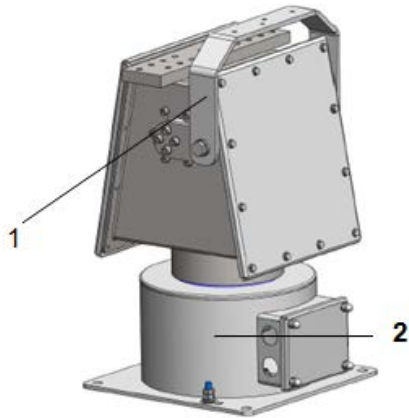
1	Connection for payload e.g. WISKA searchlight
2	Pan and tilt drive FL52

Intended use

The FL52 pan and tilt drive is designed for horizontal and vertical alignment of technical payloads for example WISKA Searchlights or cameras. (see 11.6.1)

3.2 Technical components

3.2.1 FL52



1	Connection for payload e.g. WISKA searchlight
2	Pan and tilt drive FL52

Pan and tilt drive FL52

The pan and tilt drive is made of stainless steel and is intended for mounting on the outside areas of ships.

The essential parts are:

- Two (2) driving motors
- Thermostat (option)
- Standby heating(option)
- Four (4) Limit switches
- Terminal strip

(see 11.6.1)

Installation

The function of the pan and tilt drive is supplied with 230VAC 50/60 Hz via RCU if the switch (S2) is closed.



WARNING

Option

Thermostat (B2) and standby heating (E2/1) are excluded from this function (switch S2) and are always under load.

Via the control lever drive at the remote control unit (RCU) the horizontal and vertical control of the mounted consumer (e.g. searchlight) takes place.

The limit switches switch off the control for the two motors (pan and tilt) when the end position is reached.

The standby heating (option) is controlled by a thermostat.

Via the terminal strip the pan and tilt is connected to the remote control unit (RCU).

Distribution box (optional)

There is a terminal strip in the distribution box which enables 1 to 1 wiring.

(See 11.6.1).

4 Installation

4.1 Transport and lifting



WARNING

Risk of injury from suspended loads.

If the product or parts of it come loose, serious injuries are likely:

- Always wear your personal protective equipment.
- Do not step into the swivel area or under the product.
- Secure the load carefully before further assembly.

Depending on the composition, the product is packed in cardboard boxes on pallets, weatherproof and stable.

Make sure that there is no transport damage to the packaging. If there is any damage, contact WISKA service. You will find the address on the back of this manual or www.wiska.de

Think about the environment and recycle the packaging!

Transport the product to the place of use. If assembly is still delayed, store the product according to the requirements, see chapter 10.3 Storage.

Unpack

1. Remove the packing tape used for sealing.
2. Remove the padding material from the product.
3. Refer to the operating instructions and the product.
4. ✓ The product is unpacked.

4.2 Mechanical installation



WARNING

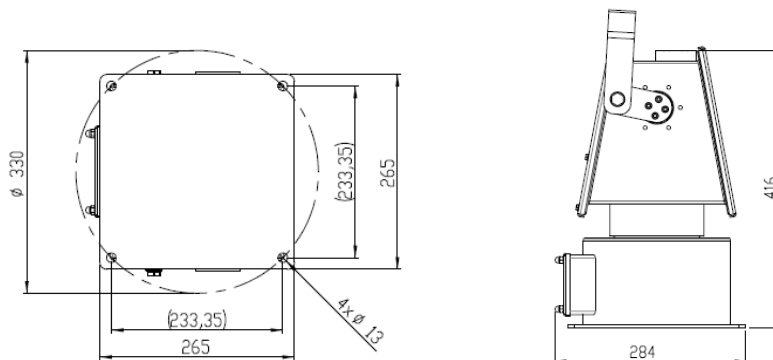
Risk of injury when working overhead.

If the product or parts of it come loose, serious injuries are likely.

- Always wear your personal protective equipment.
- Do not step into the swivel area or under the product.
- Secure the load carefully before further assembly.

Mounting the FL52 pan and tilt drive

Two persons are required for the mounting (approx. 30 kg).



1. For mounting, four (4) holes a $\varnothing 13$ each required in a circle of $\varnothing 330$ mm to drill (see 1.5 Dimensions).
2. Fit the drive and screw it on.
3. Connect the grounding cables (the individual components should be connected to a common grounding point).

Mounting the optional distribution box

If a distribution box is provided in the configuration, it must be installed at a suitable location.

4.2.1 Checking the position of the limit switches

After mounting the pan and tilt drive together with the mounted payload, the limit switch positions must be checked manually.

The corresponding maximum pan and tilt angles can be found in the technical data (chapter 11).

4.3 Electrical installation



HAZARD

Danger to life by electric currents.

Working on open circuits may cause short circuits and electric shocks through the body.

- An electrician is required when working on electrical components.
- Make sure that the system is disconnected from the electrical connection.
- Secure the power supply against being switched on again.
- Cover open parts of other systems.
- If necessary, short-circuit the system components.
- Test whether the system is voltage-free.

Electrical connection values of the drive

Mains voltage: 230 VAC, 50/60 Hz.

The connections between the Remote Control Unit RCU and the pan/tilt function must be made in accordance with 11.6.1 Circuit diagram.

**ATTENTION / NOTE**

Waterproof (IP56) installation of all connecting cables

1. Ensure that all cables are routed through appropriate watertight cable glands.
2. All cable closures must be tightened so that they are waterproof.
3. This also applies to housing covers with the corresponding seals during installation in order to maintain the protection class.
4. To avoid premature material fatigue, the correct cable types for the application environment must be used.

Note :

The cables of the FL52 drive, the RCU Remote Control Unit and, if necessary, the payload, e.g. the WISKA searchlight, can be connected directly or via an optional distribution box.

Electrical connection values of the Remote Control Unit (RCU)

Mains voltage: 230 VAC, 50/60 Hz.

Connections for the drive and the Remote Control Unit (RCU) must be made according to Circuit diagram 11.6.1.

Mains connection

- The applicable national and international regulations must be observed.
- An unmistakable and correct connection must be made!
- Check that zeroing/earthing is carried out correctly (the individual components should be connected to a common earthing point)!
- Insert the fuse or switch on the main switch again.

5 Commissioning



HAZARD

Danger of electrical shock due to unprofessional installation

Products that are not installed by qualified electricians may have malfunctions.

- Only have the product installed by qualified electricians.
- Observe the national, local and in-house regulations for work on electrical systems.

For commissioning, please proceed as follows:

- Make sure that all electrical cables are correctly connected.
- Make sure that all electrical lines and cables have been safely laid or stowed away.
- Make sure that all screw connections are correctly tightened.
- Make sure that the grounding is correct.
- After the visual inspection, close all covers that are still open.

6 Operation

6.1 General operation

This chapter describes product operation. It ensures that all possible operating types for the product are described, and explains how to make the product operational again after a system malfunction; it also provides warnings about hazardous situations that could arise during operation.



6.1.1 Switch on and operation

HAZARD

Option

Danger from the standby heater !

The standby heater is live (230V) even when the drive is switched off.



HAZARD

Danger from movement! When switching on the FL52 pan and tilt drive, ensure that nobody is endangered by the movement of the payload.



HAZARD

Danger from the specific nature of the payload!

Ensure that the characteristics of the payload and its movement do no harm to anyone.

Operation

If the payload is a temperature-dependent component, the warm-up phase must also be waited for this device. Follow the instructions of the payload (WISKA) manufacturer.

1. Switch on the drive with the switch on the Remote Control Unit (RCU). The pan and tilt drive FL52 is now ready for operation and can be moved with the Joystick.
2. If the payload is also switched via the RCU, switch is provided for this purpose. Switch the payload according to the manufacturers specifications

6.1.2 Switch off



ATTENTION

Only for FL52 equipped with heater (ICE variant):

To ensure operational readiness even at low temperatures (below -25°C), the heater of the ICE version works independently of the RCU, if connected according to the circuit diagram.

ICE variant only:

To maintain the standby function, the external power supply (from the main control panel) must always be switched on.

7 Troubleshooting

If faults occur on the product, the necessary measures can be determined here in order to provide the operator with remedial measures within the scope of his possibilities.

Error	Cause	Remedy
RCU does not switch on.	Supply voltage not present	Connecting the power supply via the main switch.
		Check the power supply.
	Wiring in the connection box	Make sure that no live wires are defective.
	On/Off switch defective	Check the on/off switch if necessary.
After switching on the voltage collapses.	Consumer causes short circuit	Check consumer
After the drive is switched on, voltage collapses.	RCU or FL52 defective	Disconnect RCU from FL52. - If the power fails again, check the RCU. - If the voltage does not collapse, check FL52.
Searchlight cannot be moved in vertical directions.	Joystick defective	Check joystick and replace if necessary
	Circuit board defective	Visual inspection of the circuit board; if traces of powder are detected, replace the circuit board. (see 8.2.7)
	Internal control cable defective	Continuity measurement of the cables - with measured cable breaks (no continuity), replace cable harness. (see 8.2.9)
	Motor Unit Tilt defective	Check motor unit tilt and replace if necessary (see 8.2.5)

Troubleshooting

Error	Cause	Remedy
Searchlight cannot be moved in horizontal direction.	Joystick defective	Check joystick and replace if necessary
	Circuit board defective	Visual inspection of the circuit board; if traces of gun smoke are detected, replace the circuit board. (see 8.2.7)
	Internal control cable defective	Transit measurement of the cables, with measured cable break (no passage) Replace cable harness. (see 8.2.9)
	Motor Unit Pan defective	Check motor unit pan, replace if necessary (see 8.2.8)
Motor Unit Tilt and Motor Unit Pan cannot be moved in horizontal and vertical direction.	If both drives do not work, it is unlikely that both drives are defective.	Replace FL52 completely.
Motor did not switch off after reaching the end position.	Limit Switch defective	Check switch, if necessary replace (see 8.2.10, 8.2.11, 8.2.12)

8 Servicing




HAZARD

Danger to life by electric currents.

Working on open circuits may cause short circuits and electric shocks through the body.

- An electrician is required when working on electrical components.
- Make sure that the system is disconnected from the electrical connection.
- Secure the power supply against being switched on again.
- Cover open parts of other systems.
- If necessary, short-circuit the system components.
- Test whether the system is voltage-free.

8.1 Maintenance

	NOTE	
	<p>Maintenance is a recommendation for maintaining the functions over the service life. A functional test must be carried out after each maintenance: Check all directions of movement with the joystick.</p>	
Maintenance	O-Ring cover 2x	Renew each time FL52 is opened. Renew at least every 4 years. See section 8.2.2 O-Ring cover. Perform functional check!
	Seal E-Room	Renew each time E-Room is opened. Renew at least every 4 years. See section 8.2.3 Rubber seal in the E-room of the lower housing. Perform functional check!
	Visual check	Replace FL52 if damaged. Detected rust spots must be removed by suitable means. Perform functional check!

- If necessary, the drive must be cleaned from the outside. No liquids may penetrate into the interior of the device during cleaning.

8.2 Repairs



HAZARD

Danger to life by electric currents.

Working on open circuits may cause short circuits and electric shocks through the body.

- An electrician is required when working on electrical components.
- Make sure that the system is disconnected from the electrical connection.
- Secure the power supply against being switched on again.
- Cover open parts of other systems.
- If necessary, short-circuit the system components.
- Test whether the system is voltage-free.



WARNING

1. Turn off the main power switch and remove the fuses.
2. Make sure that the entire electrical system is de-energised and secured against being switched on again.
3. Take the payload system out of service so that it does not cause a hazard during work.

8.2.1 Removal/ installation of parts of the FL52



SHOCK HAZARD

Risk of electric shock! Electrical connections may only be carried out by a qualified electrician. Make sure that the mains connection is voltage-free and protect it from being switched on again!

The circuit diagram is enclosed separately or see 11.6.1 Circuit diagram

1. To replace defective parts on the pan and tilt drive, it is necessary to disassemble the payload according to the manufacturer's requirements and specifications.
2. Ensure that the payload is not damaged during work on the drive.
3. Only original components of WISKA are to be used.
4. The defective parts must be replaced in accordance with the general rules of technology.
5. The defective parts must be disposed in accordance with national regulations.



Note

To remove or install parts, the earth connection must be loosened or re-established.

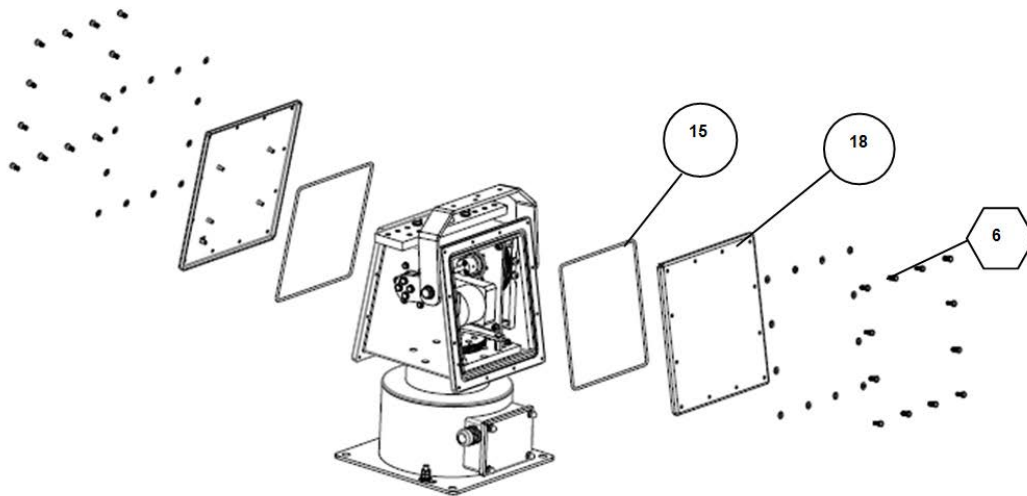
8.2.2 O-Ring cover



HAZARD	
<p>Danger to life by electric currents. Working on open circuits may cause short circuits and electric shocks through the body.</p> <ul style="list-style-type: none"> An electrician is required when working on electrical components. Make sure that the system is disconnected from the electrical connection. Secure the power supply against being switched on again. Cover open parts of other systems. If necessary, short-circuit the system components. Test whether the system is voltage-free. 	



NOTE	
<p>Loctite should only be applied to the first two threads after the screw head. When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass. Consumers (e.g. searchlights) must be removed before installation. Make sure that no water enters the housing when the cover is open.</p>	



1. Remove the screws M5x12 with washers (twelve (12) screws per cover) (PosNo.6).
2. Remove the covers (PosNr.18) of the upper housing.
3. Remove the O-rings (PosNo.15).
4. ✓ The covers on the upper housing are dismantled.
5. Clean the groove of the O-rings.
6. Insert the greased O-rings (with seawater-resistant grease-Cazar K1H) into the groove in the housing.
7. Place the covers on the housing and fasten them to the housing with the screws M5x12 (PosNo.6) and washers. The screws must be secured with Loctite 243.



NOTE

Loctite is only to be applied to the first two threads after the screw head. When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.

8. Tighten the screws M5x12 (PosNo.6) with 4.65 Nm.
9. ✓ Exchanging the O-Ring cover is done.

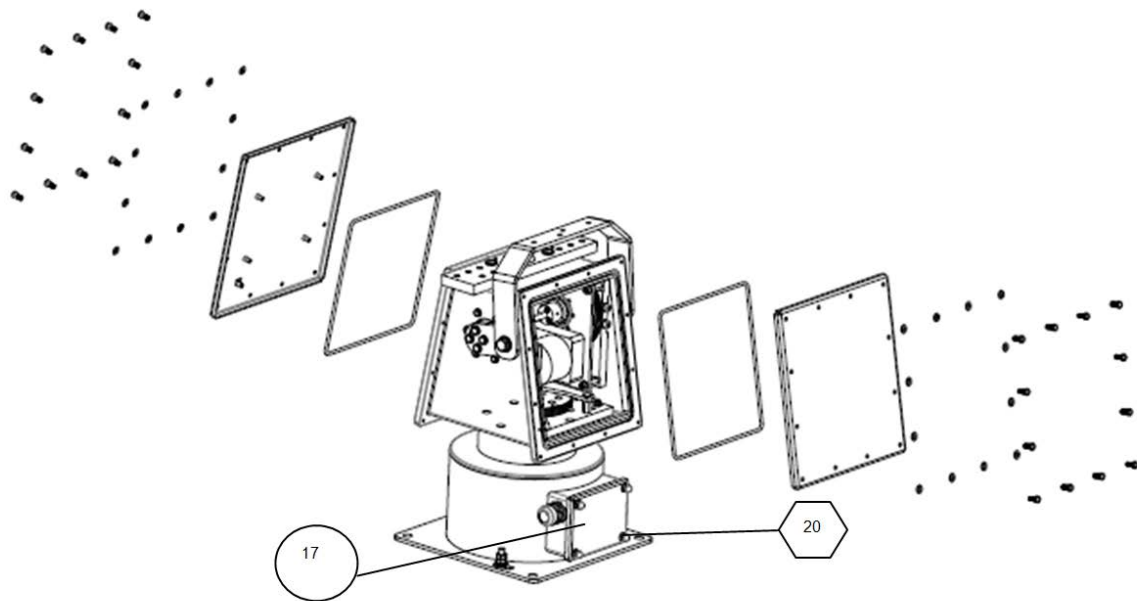
8.2.3 Rubber seal in the E-room of the lower housing



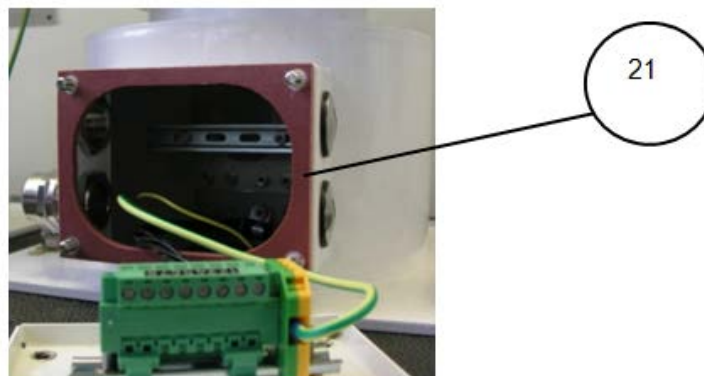
HAZARD	
<p>Danger to life by electric currents. Working on open circuits may cause short circuits and electric shocks through the body.</p> <ul style="list-style-type: none"> An electrician is required when working on electrical components. Make sure that the system is disconnected from the electrical connection. Secure the power supply against being switched on again. Cover open parts of other systems. If necessary, short-circuit the system components. Test whether the system is voltage-free. 	



NOTE	
<p>Loctite should only be applied to the first two threads after the screw head. When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass. Consumers (e.g. searchlights) must be removed before installation. Make sure that no water enters the housing when the cover is open.</p>	



1. Remove the four (4) cap nuts M6 (PosNo.20) with washers from cover E-Room lower housing.
2. Remove the cover lower housing (PosNo.17).



3. Change the Rubber seal (PosNo.21).
4. Set the cover on the housing and fixed it with the cap nuts M6 (PosNo.20) and washers.
5. The cap nuts secured with Loctite 243 must be tightened with 7.7Nm.
6. ✓ Exchanging the Rubber seal is done.

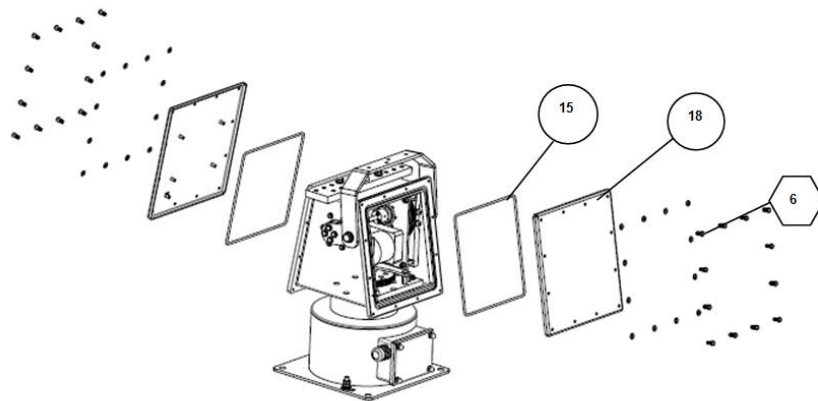
8.2.4 Motor plate Tilt (V) 230 VAC



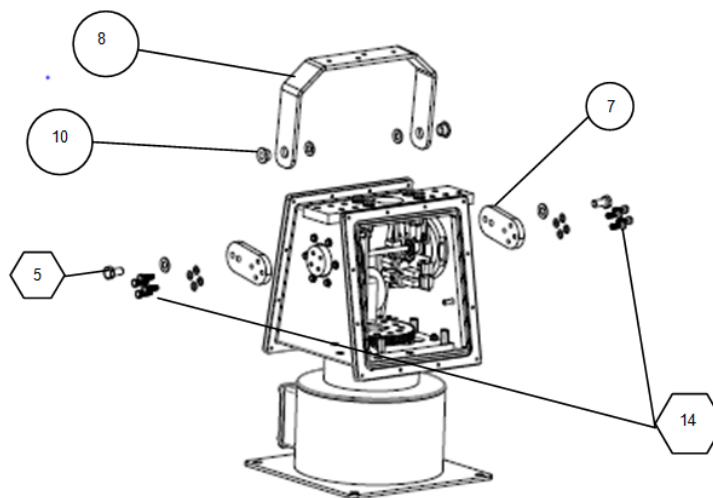
HAZARD	
<p>Danger to life by electric currents. Working on open circuits may cause short circuits and electric shocks through the body.</p> <ul style="list-style-type: none"> An electrician is required when working on electrical components. Make sure that the system is disconnected from the electrical connection. Secure the power supply against being switched on again. Cover open parts of other systems. If necessary, short-circuit the system components. Test whether the system is voltage-free. 	



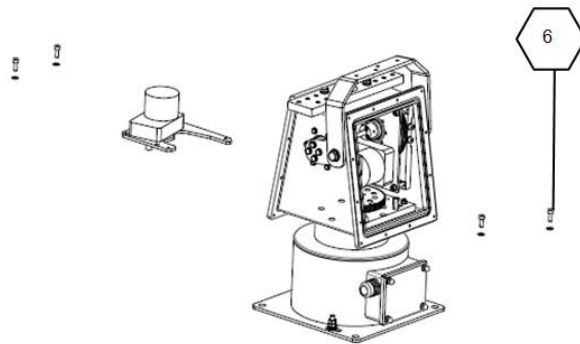
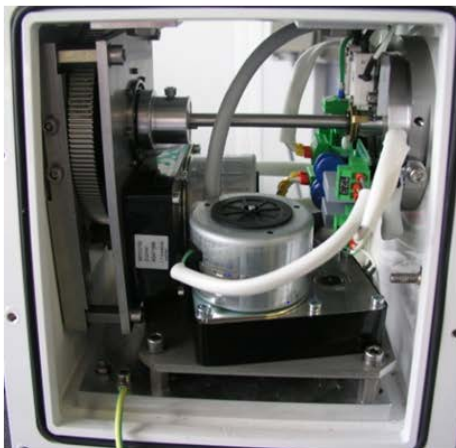
NOTE	
<p>Loctite should only be applied to the first two threads after the screw head. When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass. Consumers (e.g. searchlights) must be removed before installation. Make sure that no water enters the housing when the cover is open.</p>	



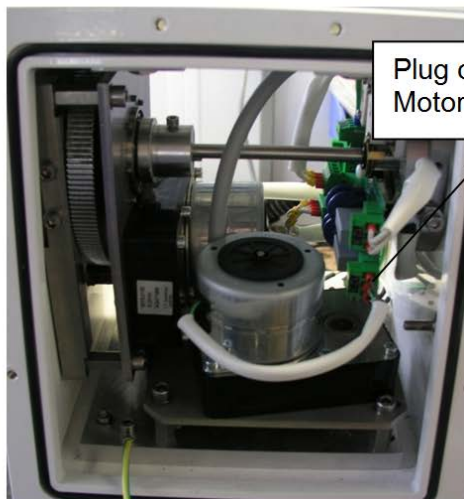
1. Remove the screws M5x12 (PosNo.6) with washers (twelve (12) screws per cover).
2. Remove the covers of the upper housing (PosNo.18).
3. Remove the O-rings (PosNo.15).



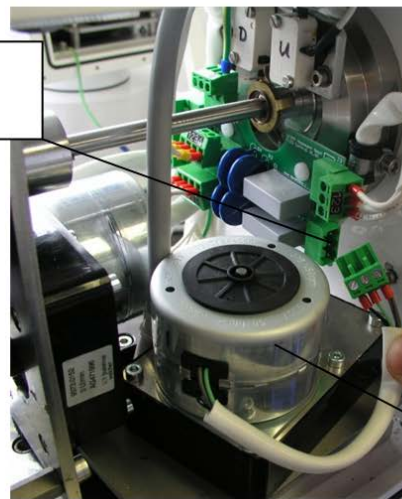
4. Remove the screw M10x20 (PosNo.5) with washer (one per side).
5. Remove the plastic collar bushing (PosNo.10).
6. Remove the stroke fork (PosNo.8).
7. Remove the eight (8) screws M6x20 (PosNo.14) with washers.
8. Remove the stroke eccentric (PosNr.7)



9. Remove the four (4) screws M6x16 (PosNo.6) with washers.

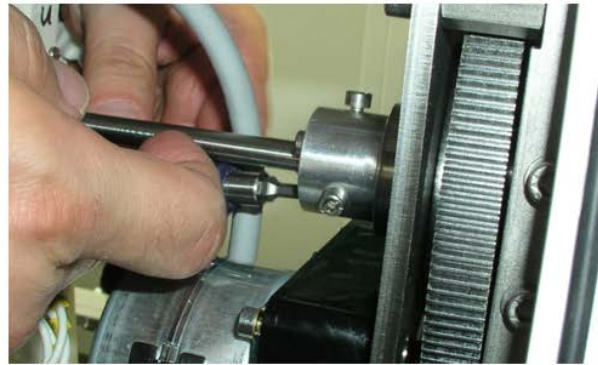
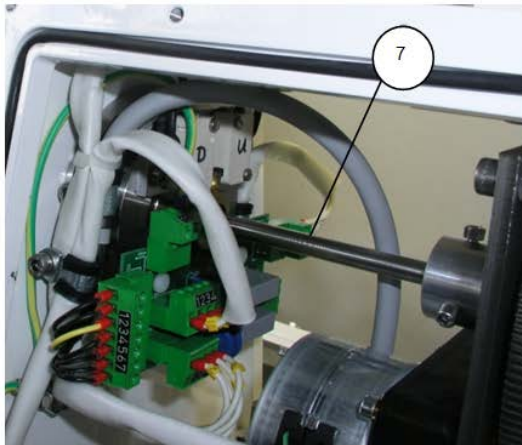


Plug connect Pan Motor

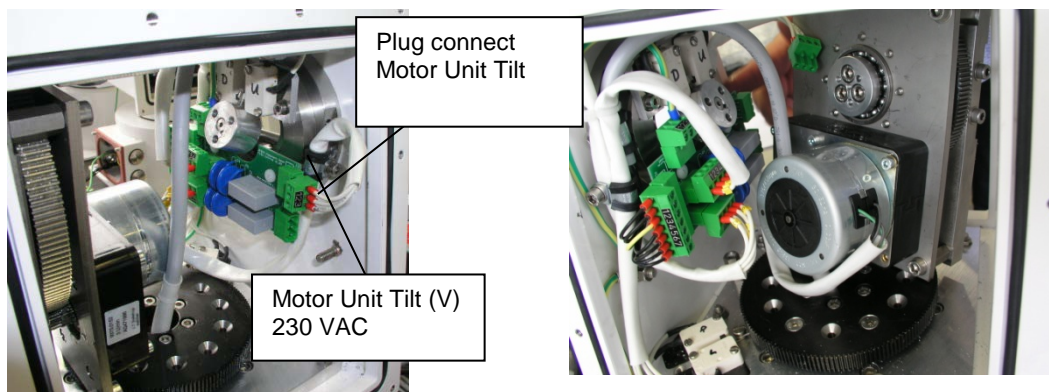


10. Remove the Plug connect Pan Motor.
 11. Remove the mounted Pan Motor (PosNo.3).
 12. ✓ The Pan Motor is dismantled.

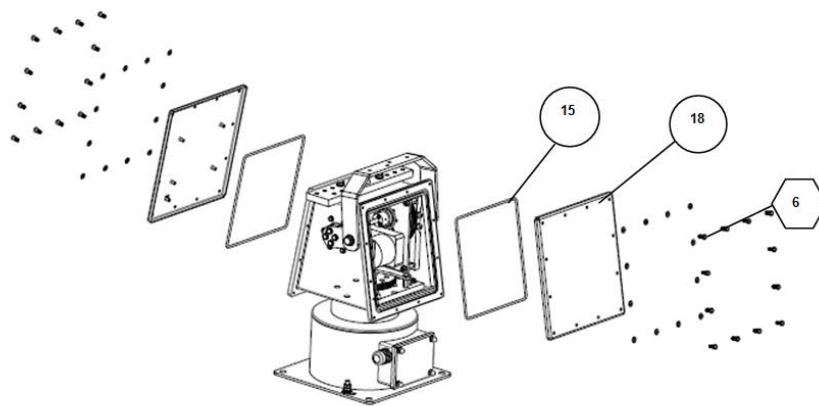
Servicing



13. Loosen the screws to slide the tilt shaft (PosNo.7) to the left.
14. Remove the six (6) screws M5x20 (PosNo.5).



15. Remove the plug connect Motor Unit Tilt.
16. Remove the Motor plate Tilt (V) 230 VAC
17. Mount the Motor plate Tilt (V) 230 VAC in reverse order.



18. Clean the groove of the O-rings.
19. Insert the greased O-rings (with seawater-resistant grease-Cazar K1H) into the groove in the housing.
20. Place the covers on the housing and fasten them to the housing with the screws M5x12 (PosNo.6) and washers. The screws must be secured with Loctite 243.

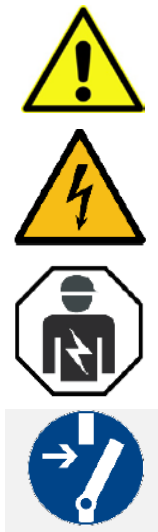


NOTE

Loctite is only to be applied to the first two threads after the screw head. When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.

21. Tighten the screws M5x12 (PosNo.6) with 4.65 Nm.
22. ✓ Exchanging the Motor plate Tilt is done.

8.2.5 Motor Unit Tilt (V) 230 VAC



HAZARD

Danger to life by electric currents.

Working on open circuits may cause short circuits and electric shocks through the body.

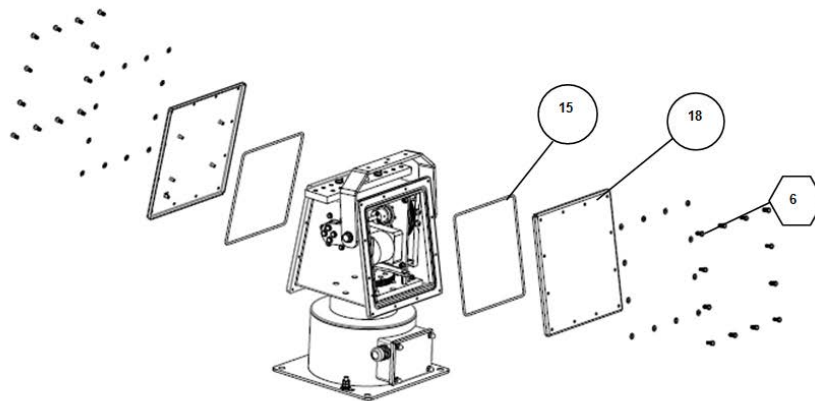
- An electrician is required when working on electrical components.
- Make sure that the system is disconnected from the electrical connection.
- Secure the power supply against being switched on again.
- Cover open parts of other systems.
- If necessary, short-circuit the system components.
- Test whether the system is voltage-free.

NOTE

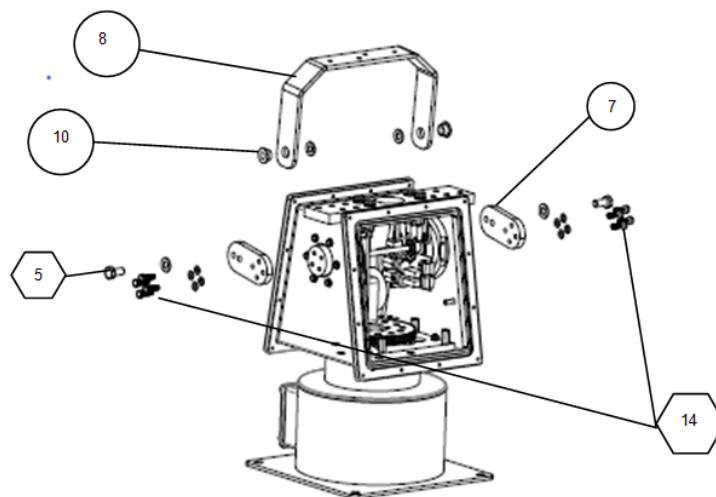
Loctite should only be applied to the first two threads after the screw head.

When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.

Consumers (e.g. searchlights) must be removed before installation. Make sure that no water enters the housing when the cover is open.

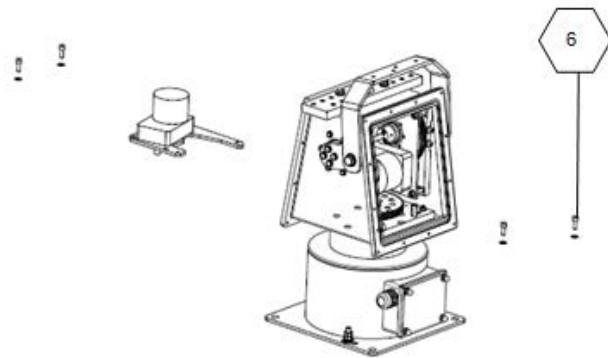
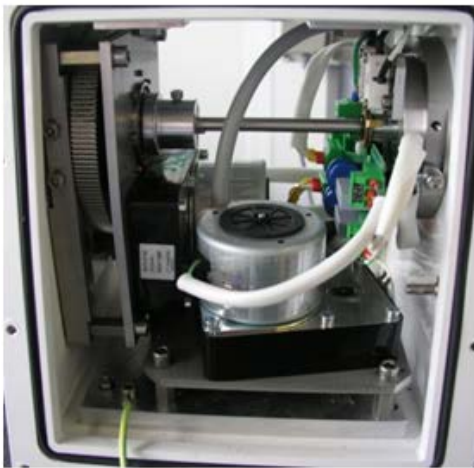


1. Remove the screws M5x12 (PosNo.6) with washers (twelve (12) screws per cover).
2. Remove the covers of the upper housing (PosNo.18).
3. Remove the O-rings (PosNo.15).

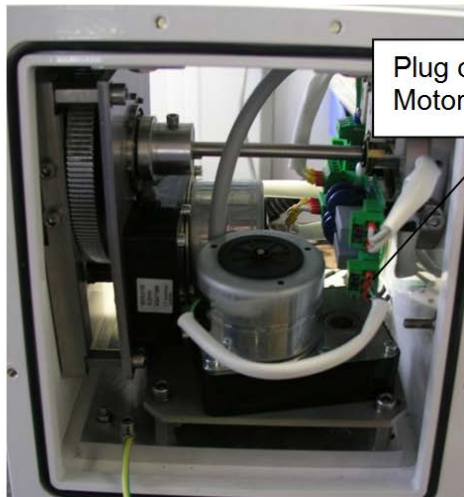


4. Remove the screw M10x20 (PosNo.5) with washer (one per side).
5. Remove the stroke fork (PosNo.8).
6. Remove the eight (8) screws M6x20 (PosNo.14) with washers.
7. Remove the stroke eccentric (PosNr.7).

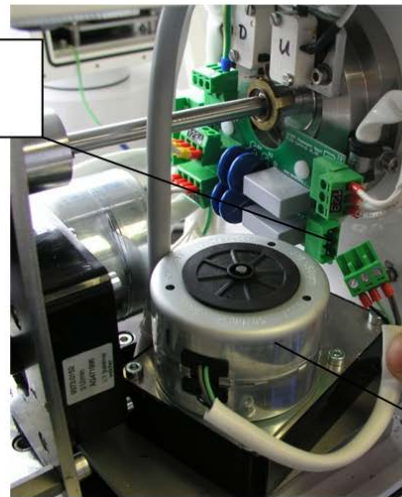
4. Remove the screw M10x20 (PosNo.5) with washer (one per side).
5. Remove the



8. Remove the four (4) screws M6x16 (PosNo.6) with washers.

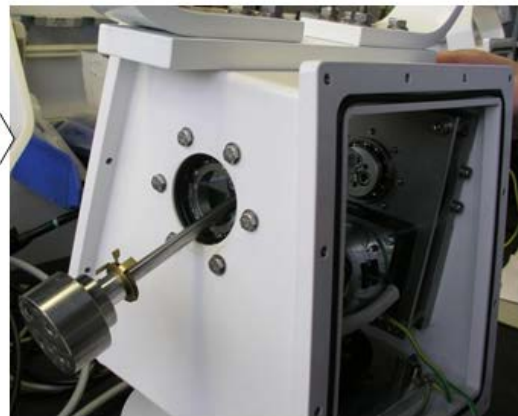
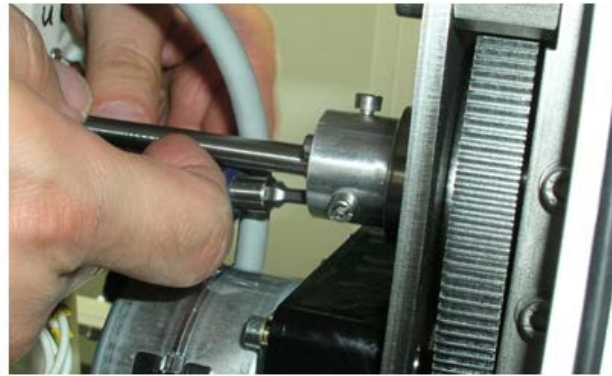
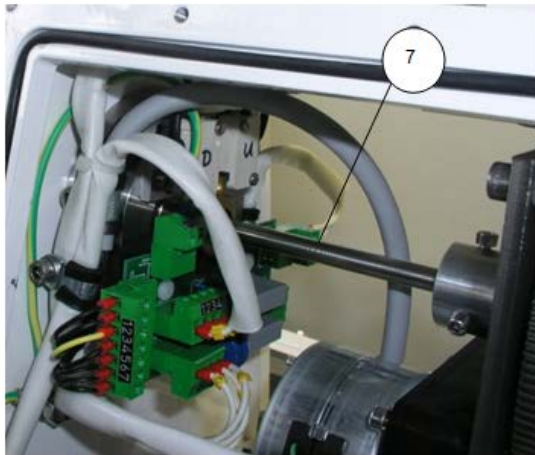


Plug connect Pan Motor

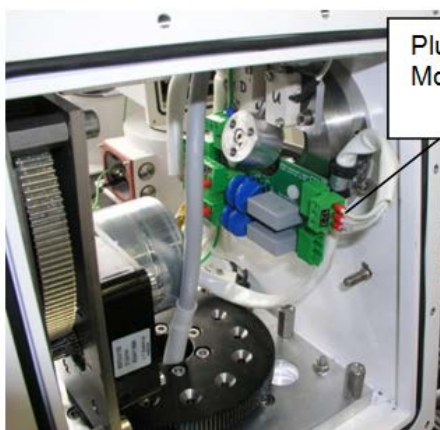


9. Remove the Plug connect Pan Motor.
 10. Remove the mounted Pan Motor (PosNo.3).
 11. ✓ The Pan Motor is dismantled.

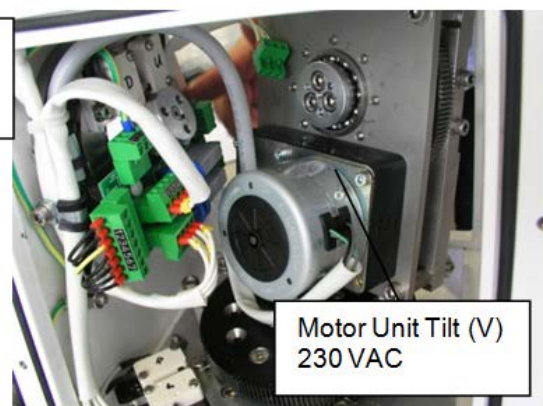
Servicing



12. Loosen the screws to slide the tilt shaft (PosNo.7) to the left.
13. Remove the six (6) screws M5x20 (PosNo.5).

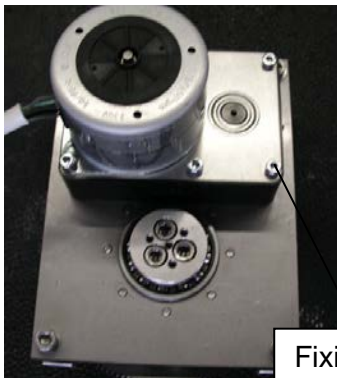


Plug connect
Motor Unit Tilt



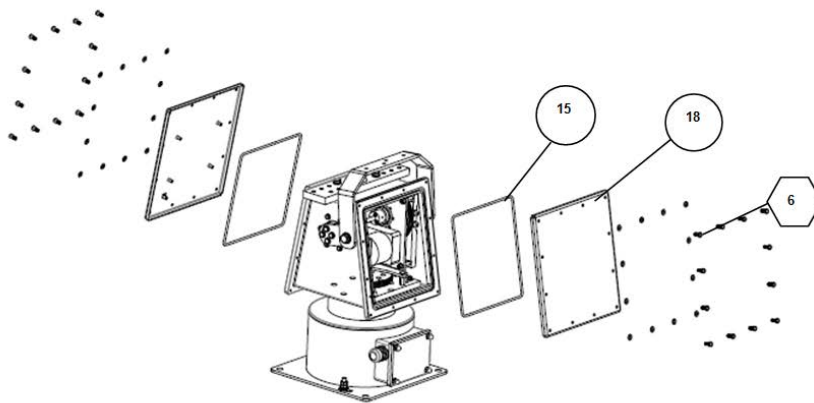
Motor Unit Tilt (V)
230 VAC

14. Remove the plug connect Motor Unit Tilt.
15. Remove the Motor plate Tilt (V) 230 VAC.



Fixing screws Motor Unit Tilt.

16. Remove the fixing screws Motor Unit Tilt from the Motor plate Tilt.
17. Install the new Motor Unit Tilt and mount it in reverse order.



18. Clean the groove of the O-rings.
20. Insert the greased O-rings (with seawater-resistant grease- Cazar K1H) into the groove in the housing.
21. Place the covers on the housing and fasten them to the housing with the screws M5x12 (PosNo.6) and washers. The screws must be secured with Loctite 243.



NOTE

Loctite is only to be applied to the first two threads after the screw head. When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.

22. Tighten the screws M5x12 (PosNo.6) with 4.65 Nm.
23. ✓ Exchanging the Motor Unit Tilt is done.

8.2.6 Pan gear wheel (H)



HAZARD

Danger to life by electric currents.

Working on open circuits may cause short circuits and electric shocks through the body.

- An electrician is required when working on electrical components.
- Make sure that the system is disconnected from the electrical connection.
- Secure the power supply against being switched on again.
- Cover open parts of other systems.
- If necessary, short-circuit the system components.
- Test whether the system is voltage-free.

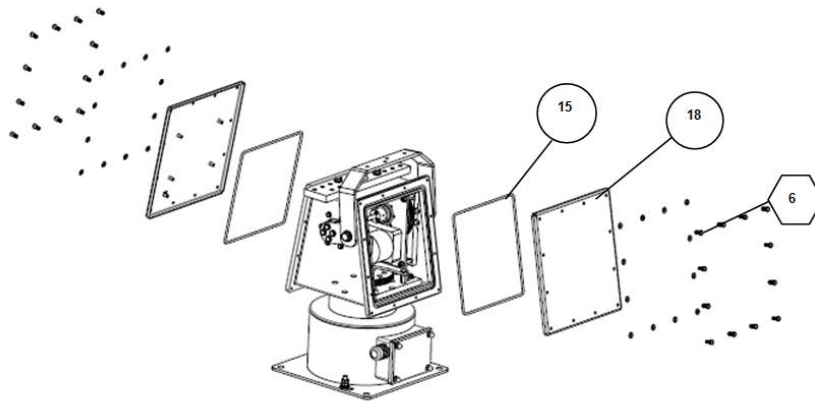


NOTE

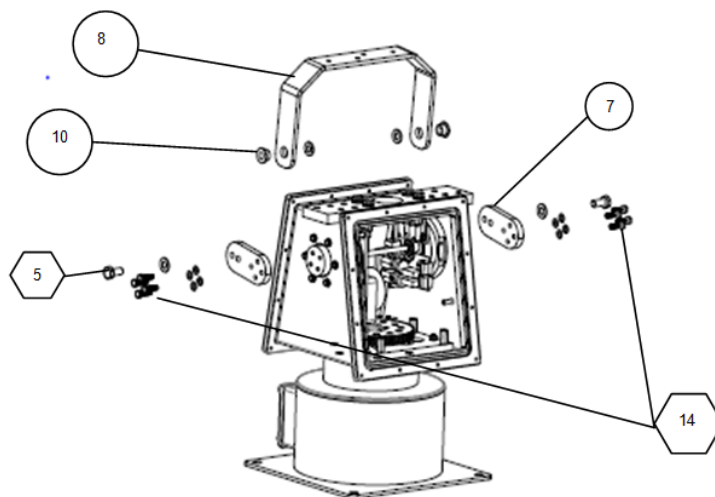
Loctite should only be applied to the first two threads after the screw head.

When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.

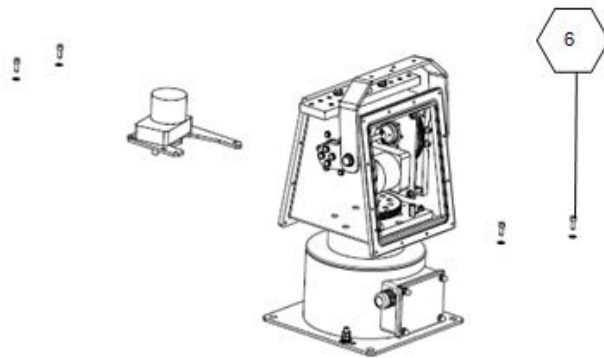
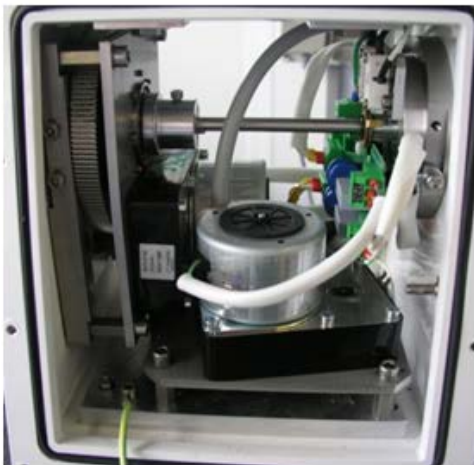
Consumers (e.g. searchlights) must be removed before installation. Make sure that no water enters the housing when the cover is open.



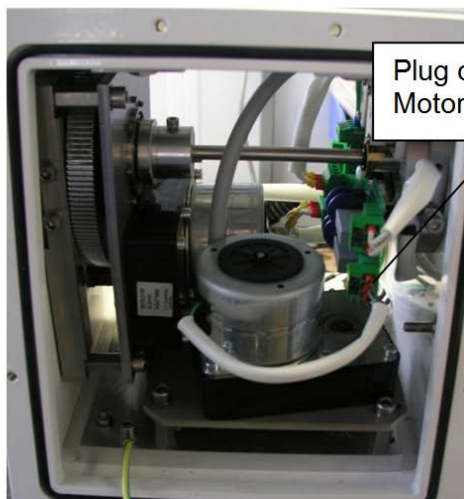
1. Remove the screws M5x12 (PosNo.6) with washers (twelve (12) screws per cover).
2. Remove the covers of the upper housing (PosNo.18).
3. Remove the O-rings (PosNo.15).



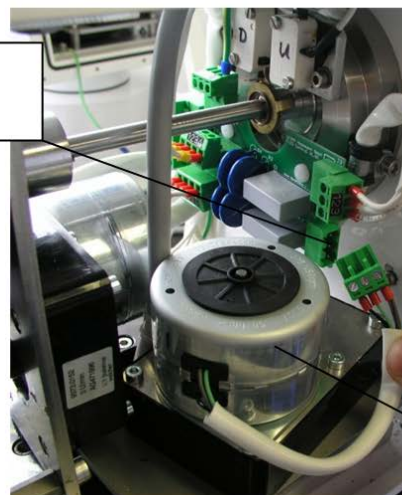
4. Remove the screw M10x20 (PosNo.5) with washer (one per side).
5. Remove the stroke fork (PosNo.8).
6. Remove the eight (8) screws M6x20 (PosNo.14) with washers.
7. Remove the stroke eccentric (PosNr.7).



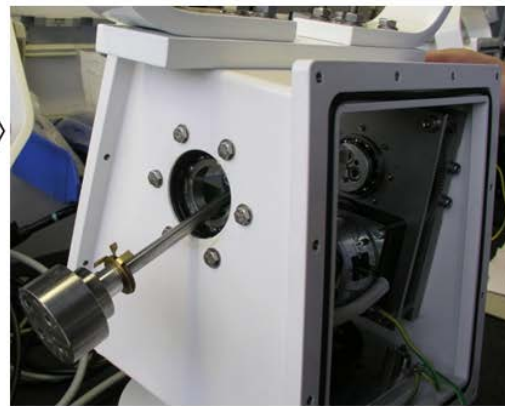
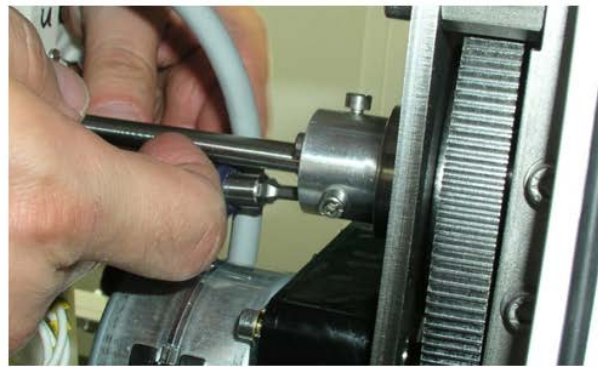
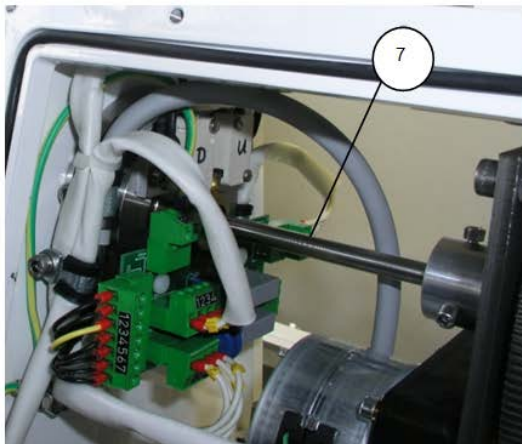
8. Remove the four (4) screws M6x16 (PosNo.6) with washers.



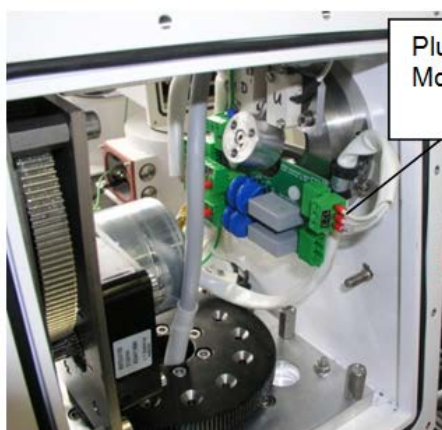
Plug connect Pan Motor



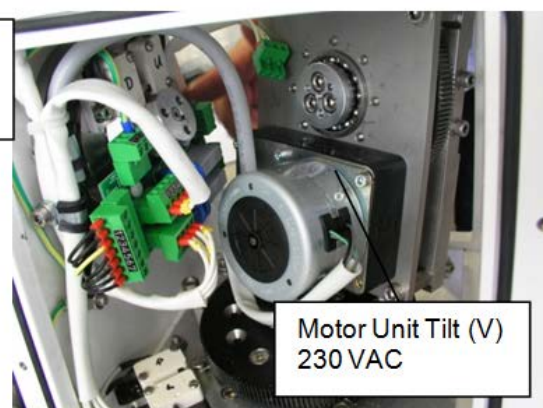
9. Remove the Plug connect Pan Motor.
10. Remove the mounted Pan Motor (PosNo.3).
11. ✓ The Pan Motor is dismantled.



12. Loosen the screws to slide the tilt shaft (PosNo.7) to the left.
13. Remove the six (6) screws M5x20 (PosNo.5).

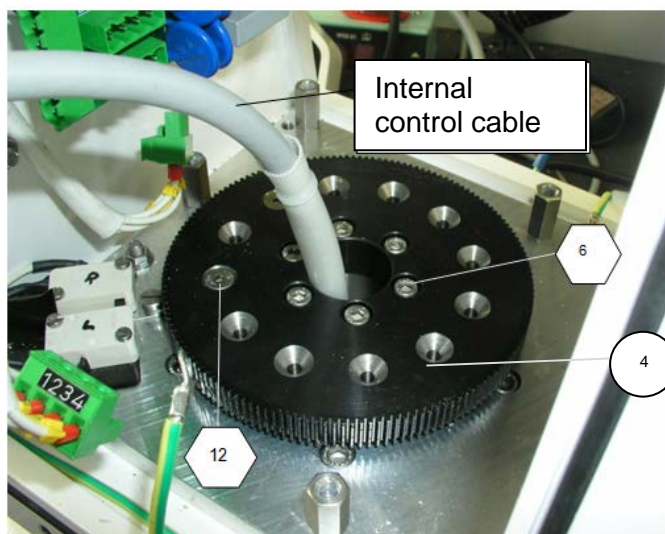


Plug connect
Motor Unit Tilt

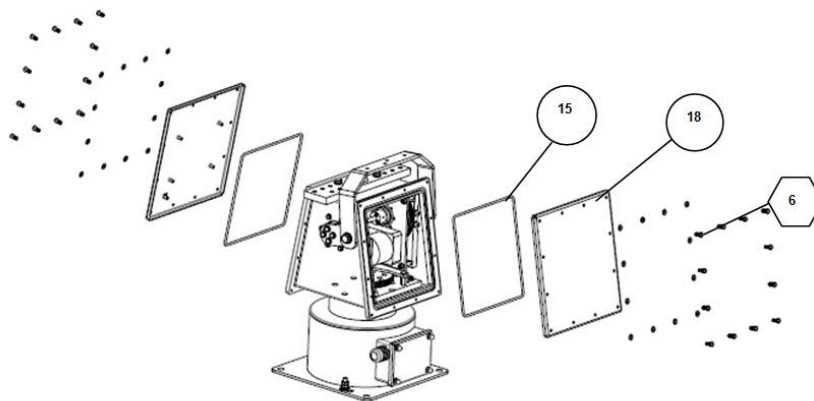


Motor Unit Tilt (V)
230 VAC

14. Remove the plug connect Motor Unit Tilt.
15. Remove the Motor plate Tilt (V) 230 VAC.



16. Loosen the plug connect Internal control cable 7G1.0.
17. The screws M5x16 (PosNo.12) are used to set the end positions of the switch.
18. Remove the screws M5x12 (PosNo.6).
19. Remove the Pan gear wheel (PosNo.4).
(The Pan gear wheel must be removed upwards).
20. Install the new Pan gear wheel and mount it in reverse order.



21. Clean the groove of the O-rings.
22. Insert the greased O-rings (with seawater-resistant grease- Cazar K1H) into the groove in the housing.
23. Place the covers on the housing and fasten them to the housing with the screws M5x12 (PosNo.6) and washers. The screws must be secured with Loctite 243.



NOTE

Loctite is only to be applied to the first two threads after the screw head. When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.

24. Tighten the screws M5x12 (PosNo.6) with 4.65 Nm.
25. ✓ Exchanging the Pan gear wheel is done.

8.2.7 E-Circuit Board 230 VAC



HAZARD

Danger to life by electric currents.

Working on open circuits may cause short circuits and electric shocks through the body.

- An electrician is required when working on electrical components.
- Make sure that the system is disconnected from the electrical connection.
- Secure the power supply against being switched on again.
- Cover open parts of other systems.
- If necessary, short-circuit the system components.
- Test whether the system is voltage-free.

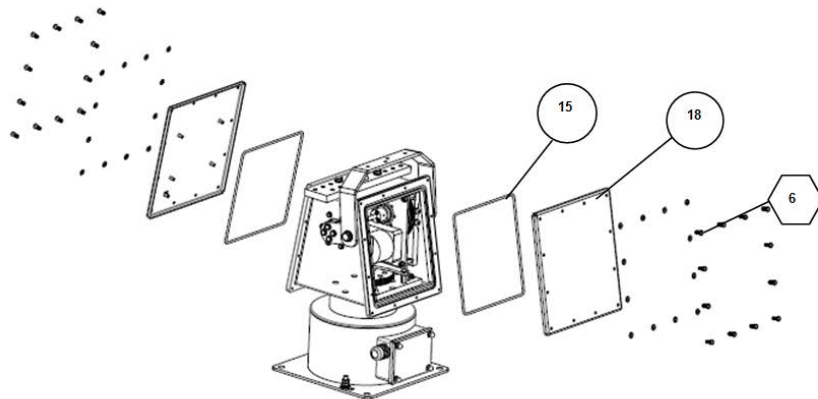


NOTE

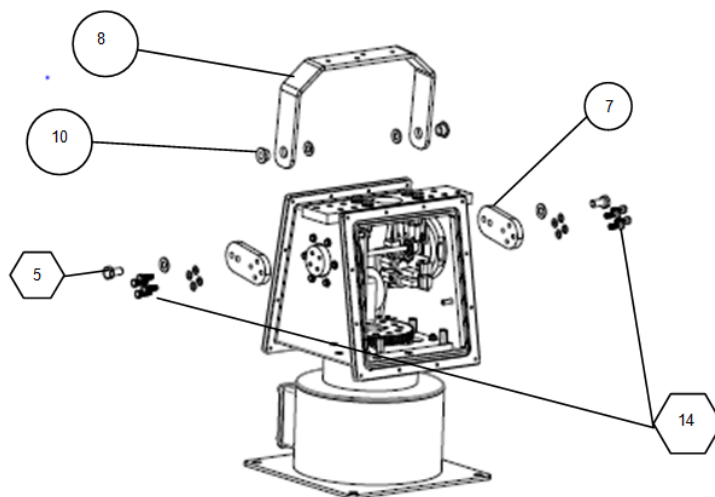
Loctite should only be applied to the first two threads after the screw head.

When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.

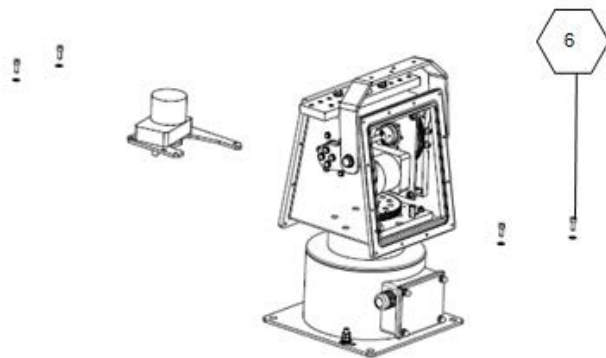
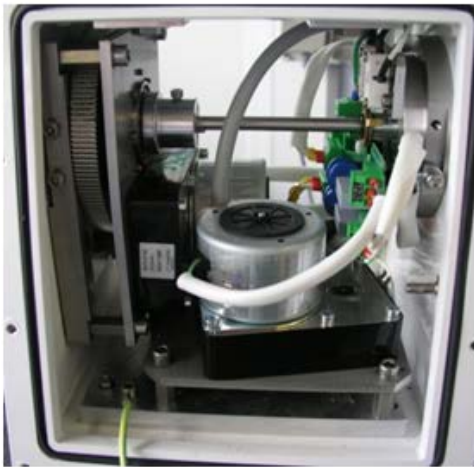
Consumers (e.g. searchlights) must be removed before installation. Make sure that no water enters the housing when the cover is open.



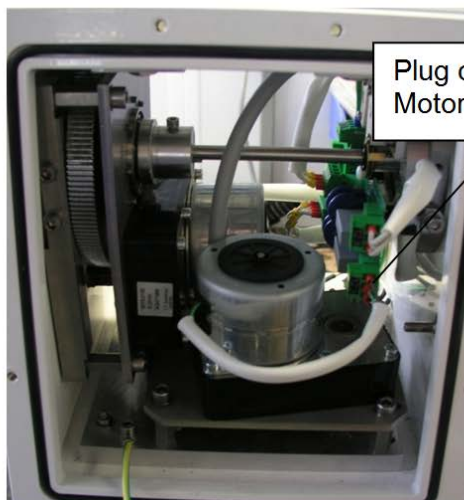
1. Remove the screws M5x12 (PosNo.6) with washers (twelve (12) screws per cover).
2. Remove the covers of the upper housing (PosNo.18).
3. Remove the O-rings (PosNo.15).



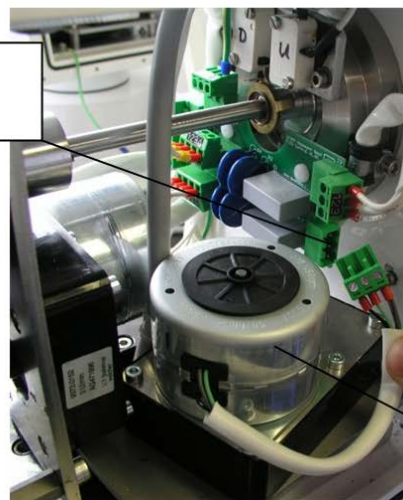
4. Remove the screw M10x20 (PosNo.5) with washer (one per side).
5. Remove the stroke fork (PosNo.8).
6. Remove the eight (8) screws M6x20 (PosNo.14) with washers.
7. Remove the stroke eccentric (PosNr.7).



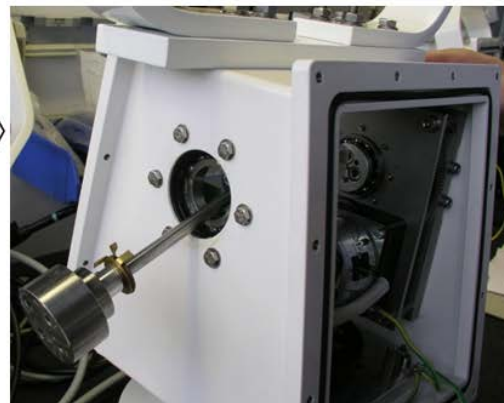
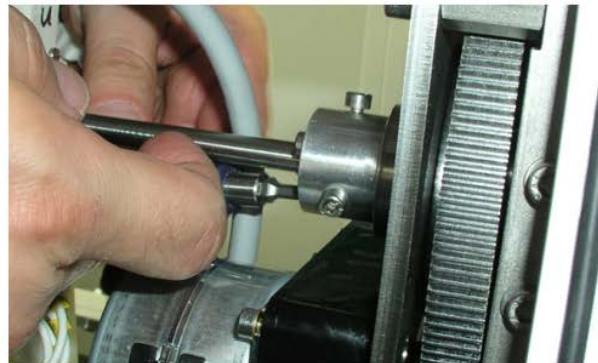
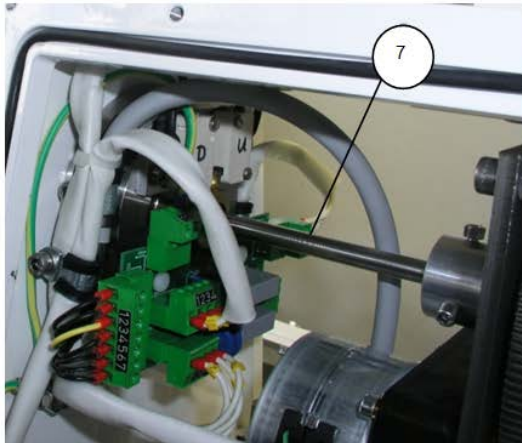
8. Remove the four (4) screws M6x16 (PosNo.6) with washers.



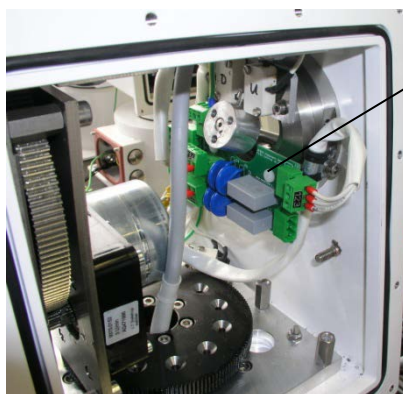
Plug connect Pan Motor



- 9. Remove the Plug connect Pan Motor.
- 10. Remove the mounted Pan Motor (PosNo.3).
- 11. ✓ The Pan Motor is dismantled.

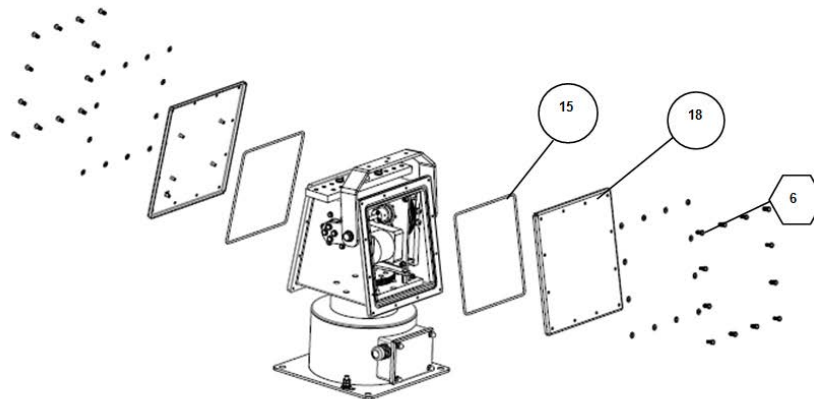


12. Loosen the screws to slide the tilt shaft (PosNo.7) to the left.
13. Remove the six (6) screws M5x20 (PosNo.5).



Screw connection of the E-Circuit Board 230 VAC

14. Remove all connectors on the E-circuit board.
15. Loosen the both screws of the E-circuit board.
16. Installed the new E-circuit board in reverse order.



17. Clean the groove of the O-rings.
18. Insert the greased O-rings (with seawater-resistant grease- Cazar K1H) into the groove in the housing.
19. Place the covers on the housing and fasten them to the housing with the screws M5x12 (PosNo.6) and washers. The screws must be secured with Loctite 243.



NOTE

Loctite is only to be applied to the first two threads after the screw head. When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.

20. Tighten the screws M5x12 (PosNo.6) with 4.65 Nm.
21. ✓ Exchanging E-circuit board is done.

8.2.8 Motor Unit Pan



HAZARD

Danger to life by electric currents.

Working on open circuits may cause short circuits and electric shocks through the body.

- An electrician is required when working on electrical components.
- Make sure that the system is disconnected from the electrical connection.
- Secure the power supply against being switched on again.
- Cover open parts of other systems.
- If necessary, short-circuit the system components.
- Test whether the system is voltage-free.

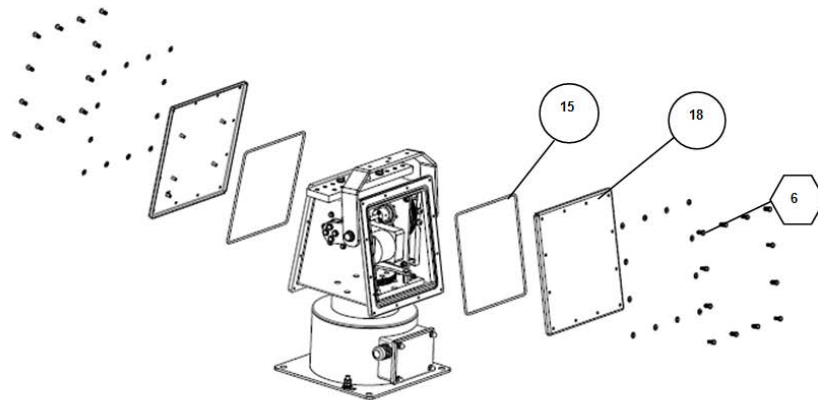


NOTE

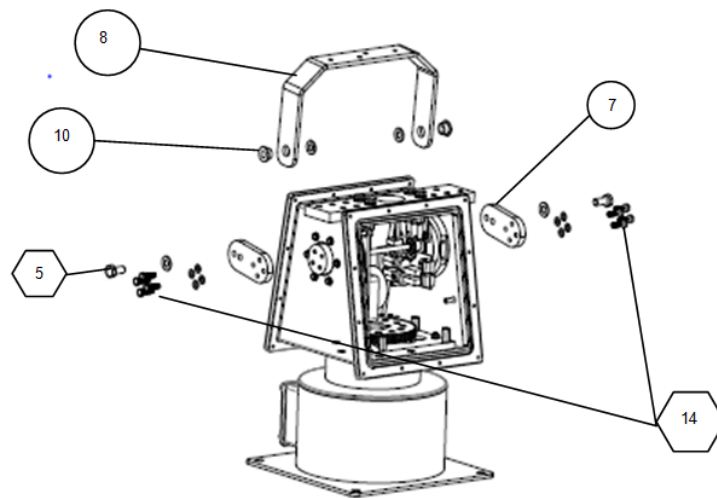
Loctite should only be applied to the first two threads after the screw head.

When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.

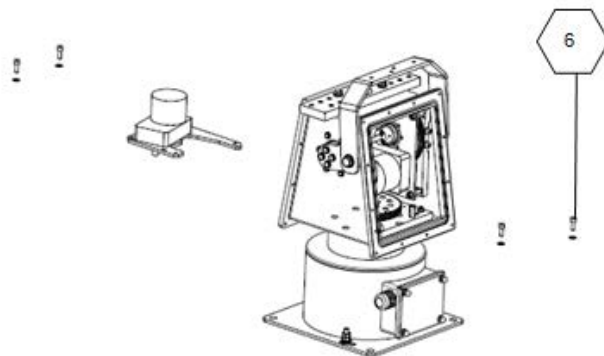
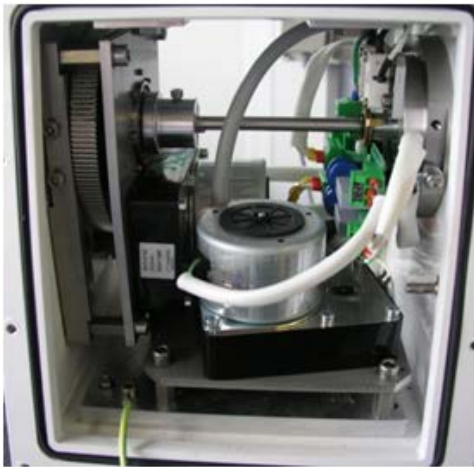
Consumers (e.g. searchlights) must be removed before installation. Make sure that no water enters the housing when the cover is open.



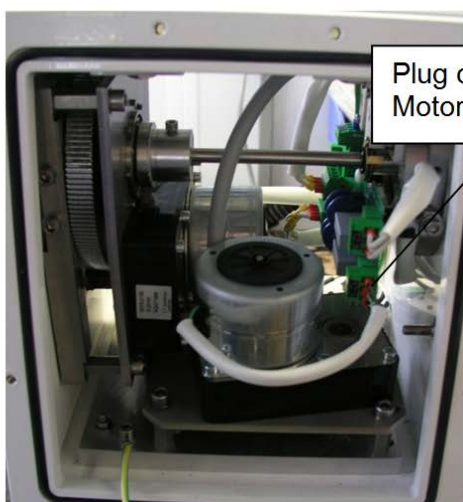
1. Remove the screws M5x12 (PosNo.6) with washers (twelve (12) screws per cover).
2. Remove the covers of the upper housing (PosNo.18).
3. Remove the O-rings (PosNo.15).



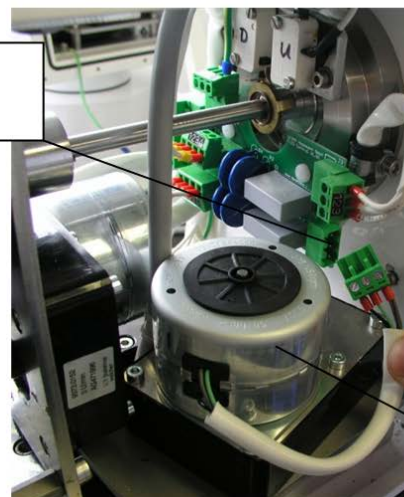
4. Remove the screw M10x20 (PosNo.5) with washer (one per side).
5. Remove the stroke fork (PosNo.8).
6. Remove the eight (8) screws M6x20 (PosNo.14) with washers.
7. Remove the stroke eccentric (PosNr.7).



8. Remove the four (4) screws M6x16 (PosNo.6) with washers.

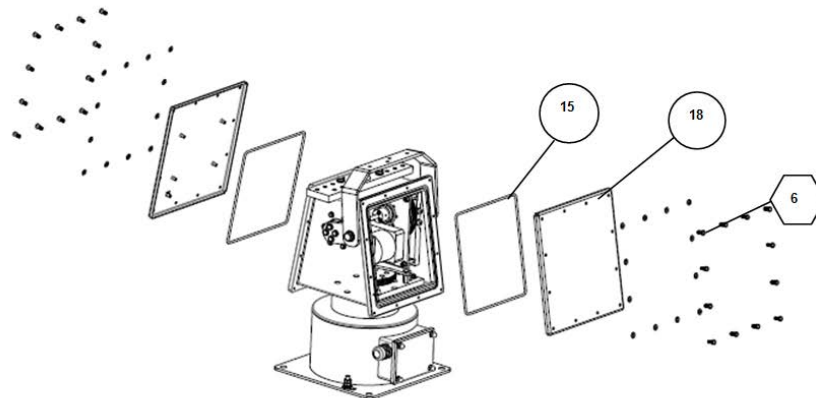


Plug connect Pan
Motor



3

9. Remove the Plug connect Motor unit Pan.
10. Remove the mounted Motor Unit Pan (PosNo.3).
11. ✓ The Motor unit pan is dismantled.
12. Install the new Motor unit Pan in reverse order.



13. Clean the groove of the O-rings.
14. Insert the greased O-rings (with seawater-resistant grease- Cazar K1H) into the groove in the housing.
15. Place the covers on the housing and fasten them to the housing with the screws M5x12 (PosNo.6) and washers. The screws must be secured with Loctite 243.



NOTE

Loctite is only to be applied to the first two threads after the screw head. When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.

16. Tighten the screws M5x12 (PosNo.6) with 4.65 Nm.
17. ✓ Exchanging Motor unit Pan is done.

8.2.9 Internal Control Cable



HAZARD

Danger to life by electric currents.

Working on open circuits may cause short circuits and electric shocks through the body.

- An electrician is required when working on electrical components.
- Make sure that the system is disconnected from the electrical connection.
- Secure the power supply against being switched on again.
- Cover open parts of other systems.
- If necessary, short-circuit the system components.
- Test whether the system is voltage-free.

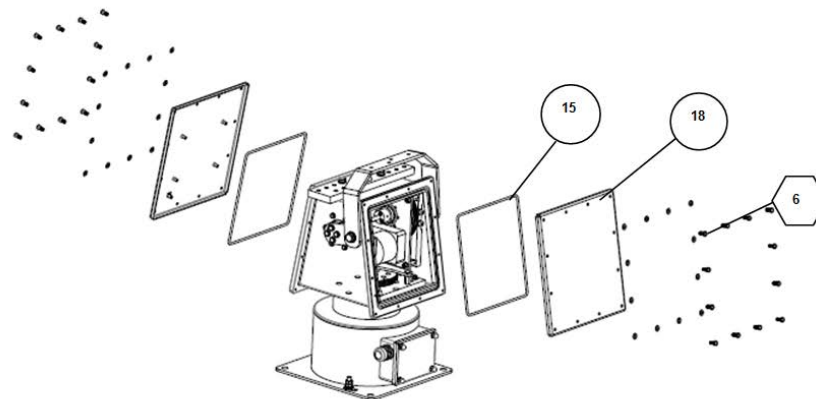


NOTE

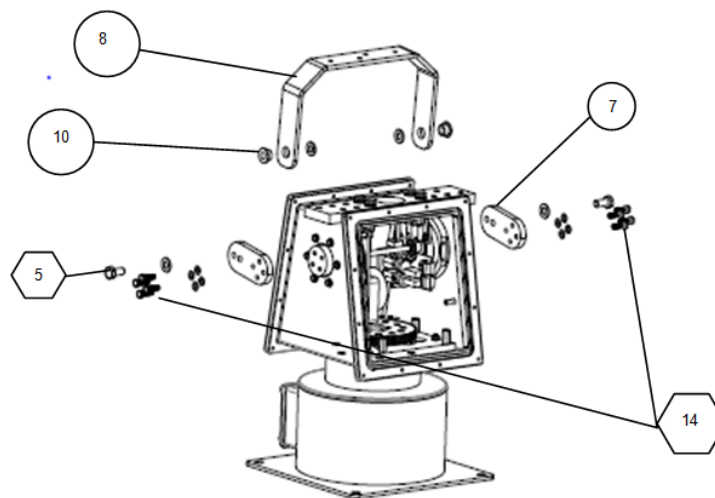
Loctite should only be applied to the first two threads after the screw head.

When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.

Consumers (e.g. searchlights) must be removed before installation. Make sure that no water enters the housing when the cover is open.

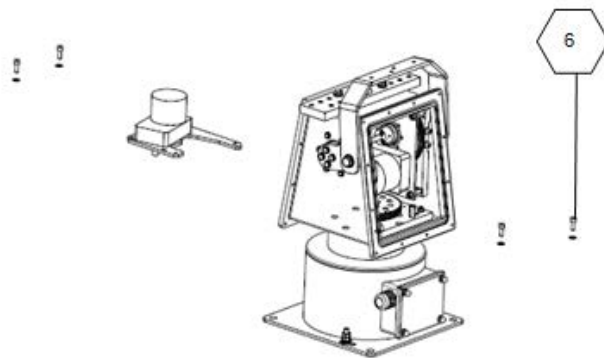
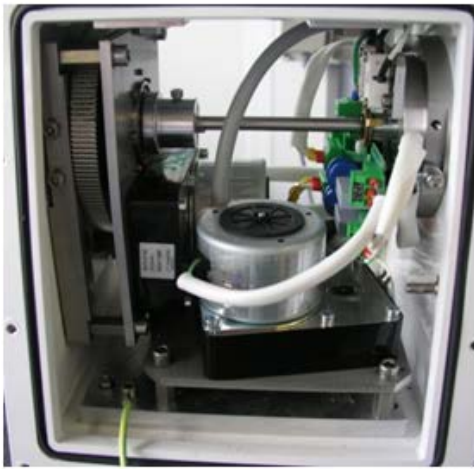


1. Remove the screws M5x12 (PosNo.6) with washers (twelve (12) screws per cover).
2. Remove the covers of the upper housing (PosNo.18).
3. Remove the O-rings (PosNo.15).

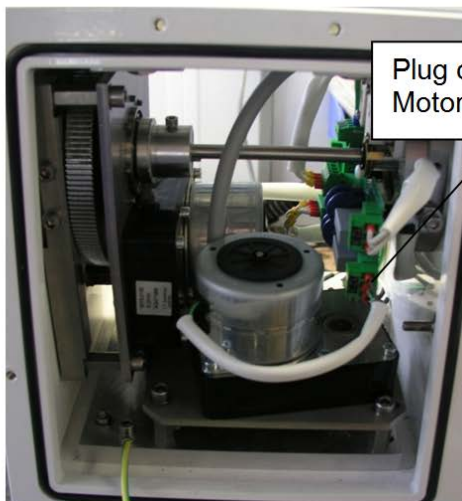


4. Remove the screw M10x20 (PosNo.5) with washer (one per side).
5. Remove the stroke fork (PosNo.8).
6. Remove the eight (8) screws M6x20 (PosNo.14) with washers.
7. Remove the stroke eccentric (PosNr.7).

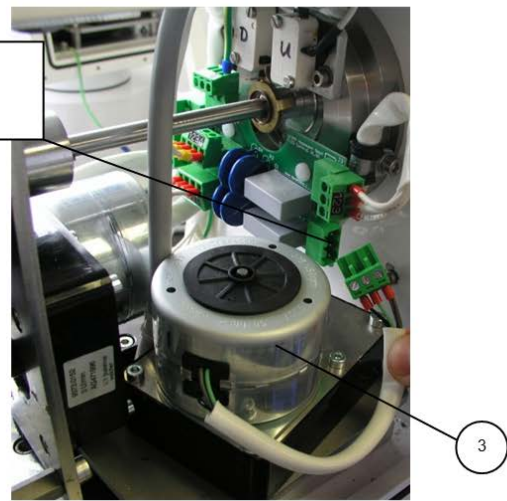
Servicing



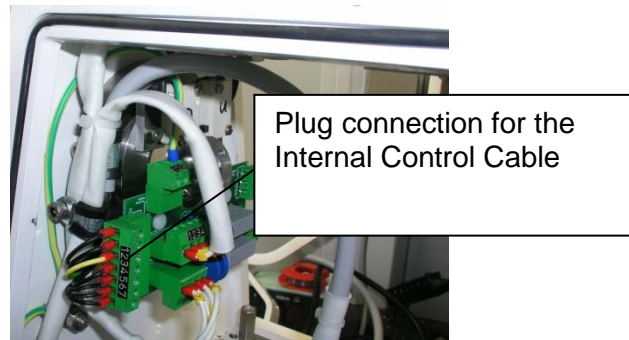
8. Remove the four (4) screws M6x16 (PosNo.6) with washers.



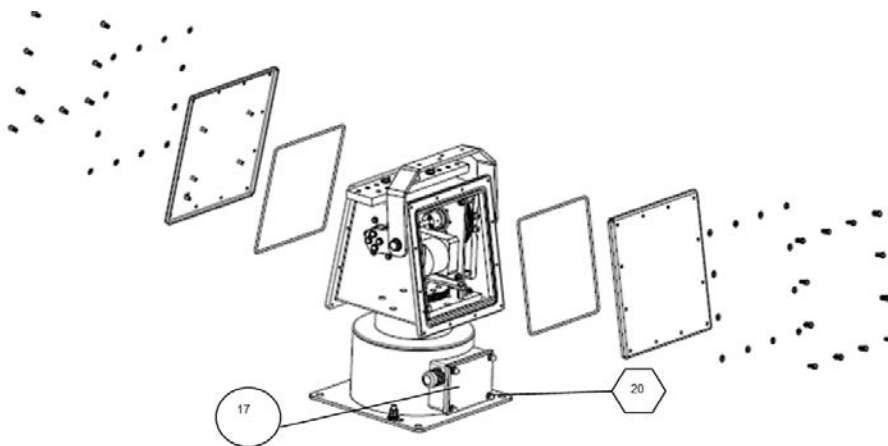
Plug connect Pan Motor



- 9. Remove the Plug connect Pan Motor.
- 10. Remove the mounted Pan Motor (PosNo.3).
- 11. ✓ The Pan Motor is dismantled.

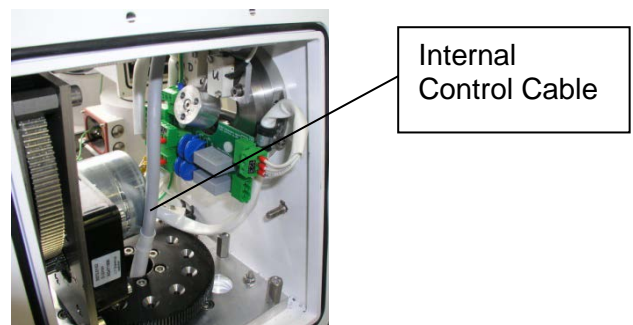
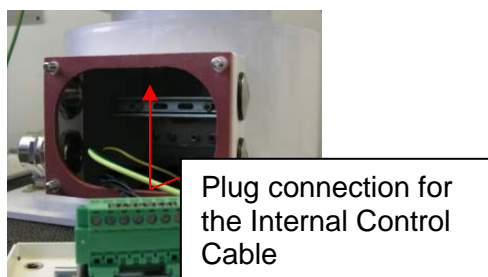


12. Remove the plug connection for the Internal Control Cable.



13. Remove the four (4) cap nut M6 (PosNo.20) with washers from cover E-Room lower housing.

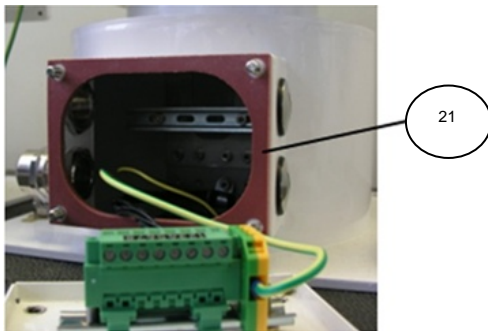
14. Remove the cover lower housing (PosNo.17).



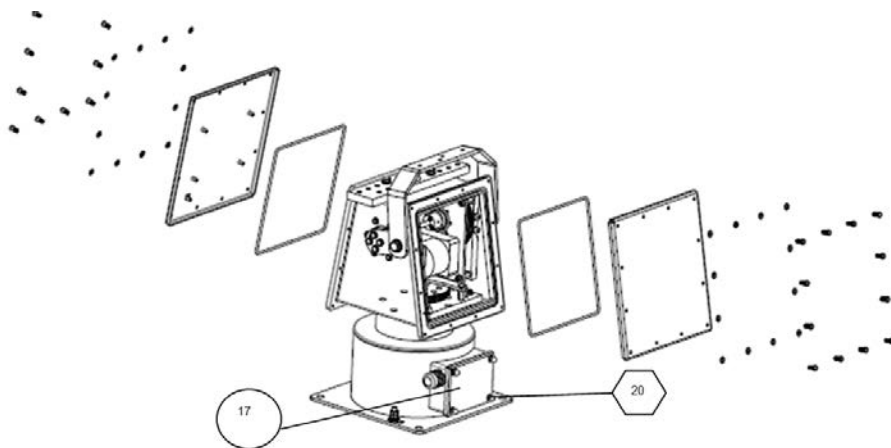
15. Disconnect the cables from the terminal strip inside the lower housing.

16. Pull the internal control cable upwards.

17. Insert the new Internal Control Cable and install it in reverse order.

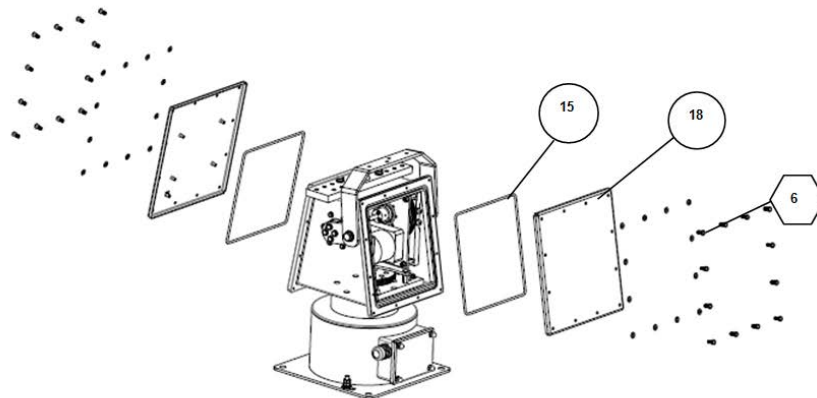


18. Change the rubber seal (PosNo.21).



19. Set the cover on the housing and fixed with the cap nuts M6 (PosNo.20) and washers.

20. The cap nuts secured with Loctite 243 must be tightened with 7.7Nm.



21. Clean the groove of the O-rings.
22. Insert the greased O-rings (with seawater-resistant grease- Cazar K1H) into the groove in the housing.
23. Place the covers on the housing and fasten them to the housing with the screws M5x12 (PosNo.6) and washers. The screws must be secured with Loctite 243.



NOTE

Loctite is only to be applied to the first two threads after the screw head. When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.

24. Tighten the screws M5x12 (PosNo.6) with 4.65 Nm.
25. ✓ Exchanging Internal Control Cable is done.

8.2.10 Limit Switch Unit Tilt (V)



HAZARD

Danger to life by electric currents.

Working on open circuits may cause short circuits and electric shocks through the body.

- An electrician is required when working on electrical components.
- Make sure that the system is disconnected from the electrical connection.
- Secure the power supply against being switched on again.
- Cover open parts of other systems.
- If necessary, short-circuit the system components.
- Test whether the system is voltage-free.

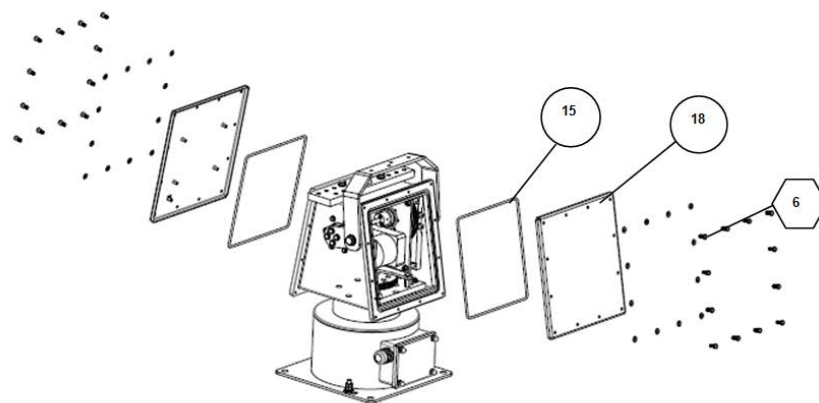


NOTE

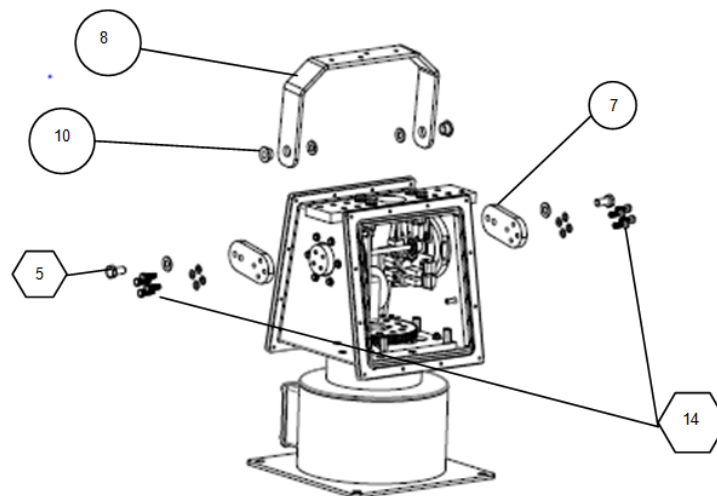
Loctite should only be applied to the first two threads after the screw head.

When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.

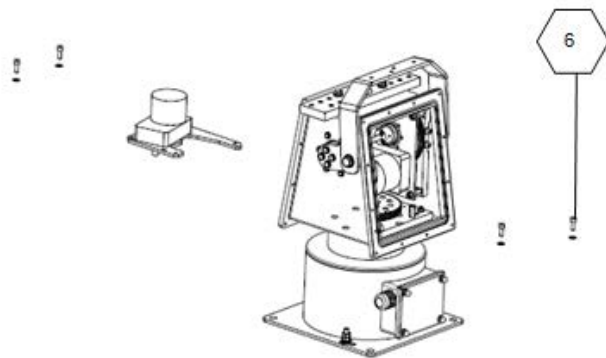
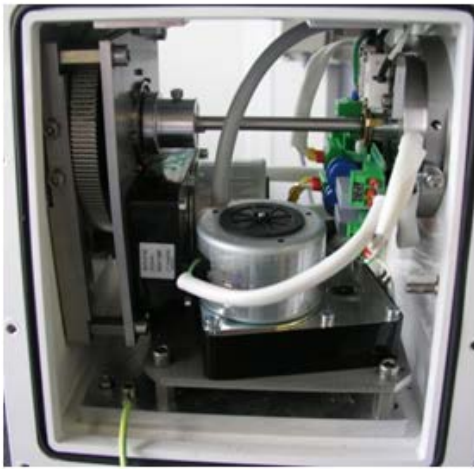
Consumers (e.g. searchlights) must be removed before installation. Make sure that no water enters the housing when the cover is open.



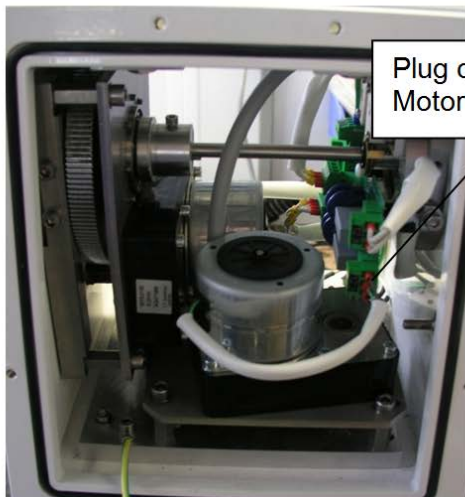
1. Remove the screws M5x12 (PosNo.6) with washers (twelve (12) screws per cover).
2. Remove the covers of the upper housing (PosNo.18).
3. Remove the O-rings (PosNo.15).



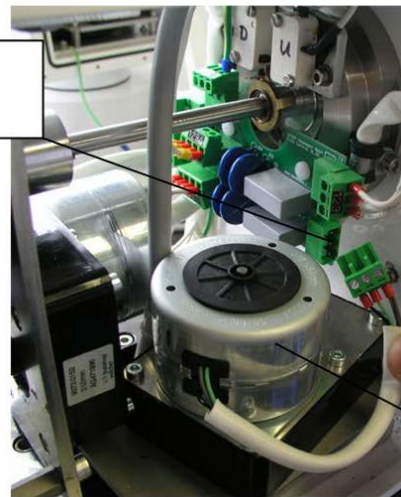
4. Remove the screw M10x20 (PosNo.5) with washer (one per side).
5. Remove the stroke fork (PosNo.8).
6. Remove the eight (8) screws M6x20 (PosNo.14) with washers.
7. Remove the stroke eccentric (PosNr.7).



8. Remove the four (4) screws M6x16 (PosNo.6) with washers.

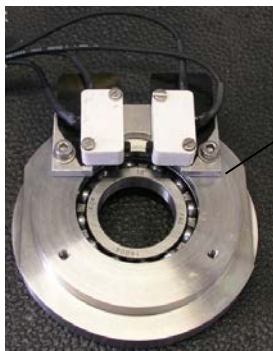
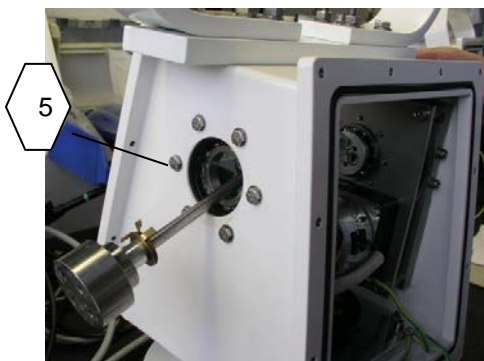
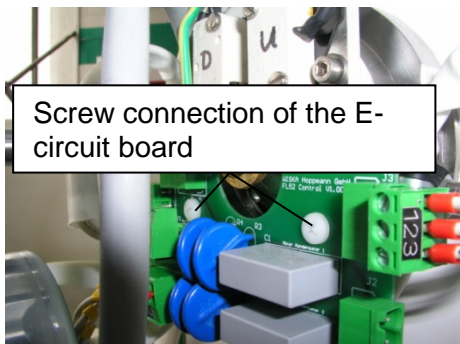
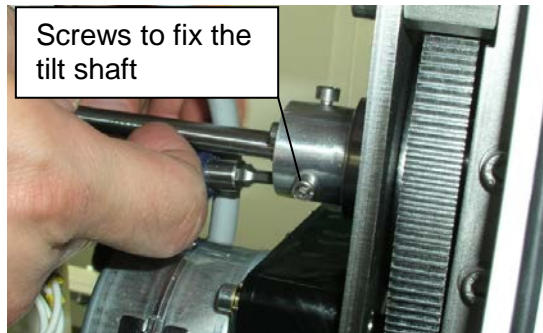
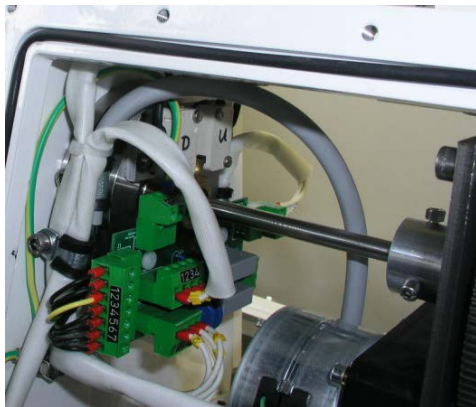


Plug connect Pan Motor



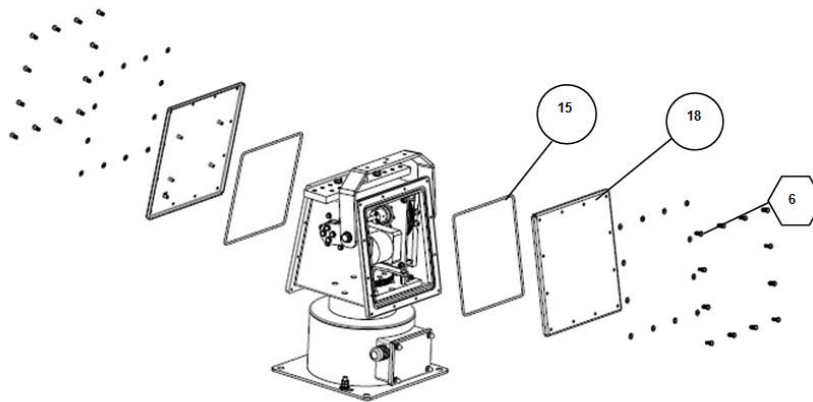
9. Remove the Plug connect Pan Motor.
10. Remove the mounted Pan Motor (PosNo.3).
11. ✓ The Pan Motor is dismantled.

Servicing



Tracking bearing with end positions Switch.

12. Loosen the fastening screws of the tilt shaft and pull out the shaft to the left.
13. Remove the screw connection of the E-circuit board and remove it from the tracking bearing.
14. Remove the six (6) screws (PosNo.5).
15. Remove the tracking bearing with end positions switch.
16. Insert the new tracking bearing with end positions switch and mount it in reverse order.



17. Clean the groove of the O-rings.
18. Insert the greased O-rings (with seawater-resistant grease- Cazar K1H) into the groove in the housing.
19. Place the covers on the housing and fasten them to the housing with the screws M5x12 (PosNo.6) and washers. The screws must be secured with Loctite 243.



NOTE

Loctite is only to be applied to the first two threads after the screw head. When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.

20. Tighten the screws M5x12 (PosNo.6) with 4.65 Nm.
21. ✓ Exchanging Limit Switch Unit is done.

8.2.11 Limit Switch Pan (H)



HAZARD

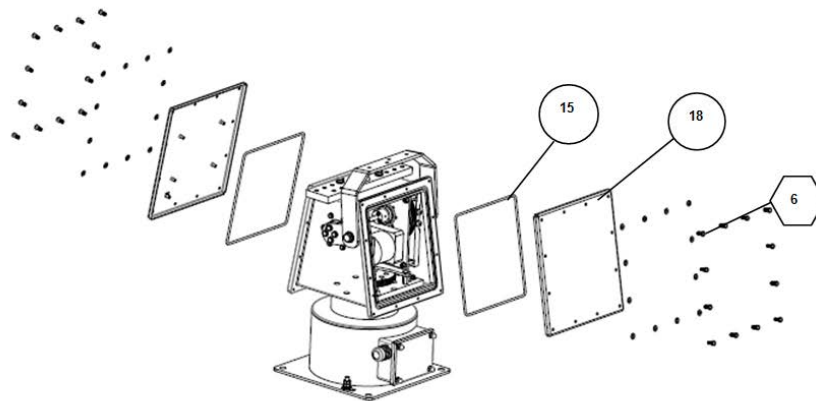
Danger to life by electric currents.
Working on open circuits may cause short circuits and electric shocks through the body.

- An electrician is required when working on electrical components.
- Make sure that the system is disconnected from the electrical connection.
- Secure the power supply against being switched on again.
- Cover open parts of other systems.
- If necessary, short-circuit the system components.
- Test whether the system is voltage-free.

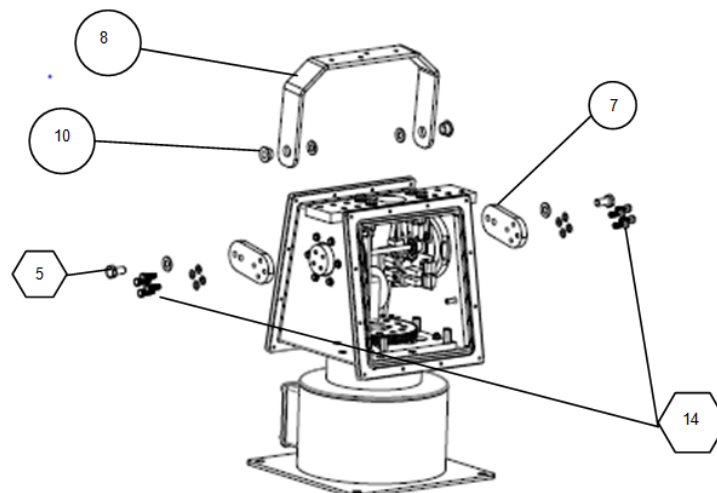


NOTE

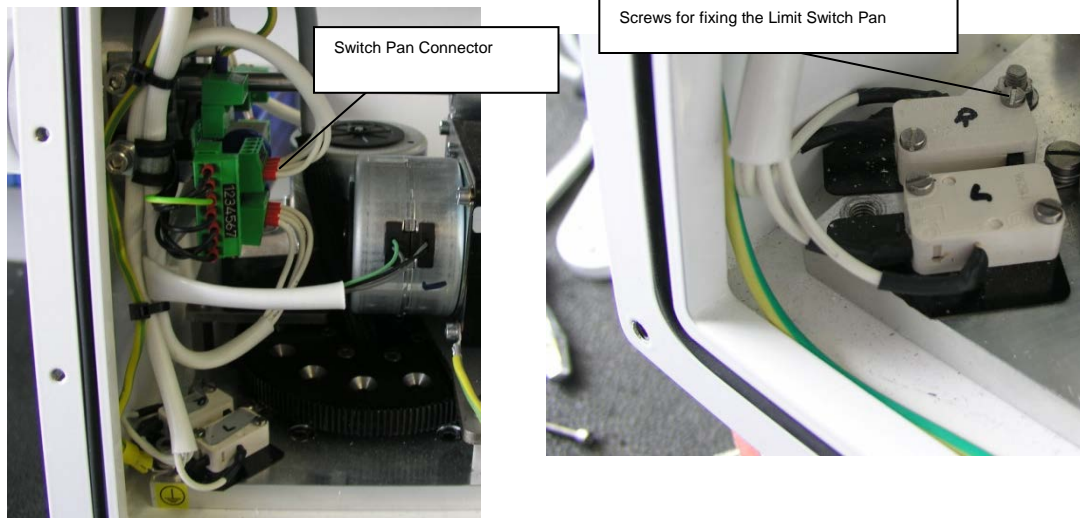
Loctite should only be applied to the first two threads after the screw head.
When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.
Consumers (e.g. searchlights) must be removed before installation.
Make sure that no water enters the housing when the cover is open.



1. Remove the screws M5x12 (PosNo.6) with washers (twelve (12) screws per cover).
2. Remove the covers of the upper housing (PosNo.18).
3. Remove the O-rings (PosNo.15).



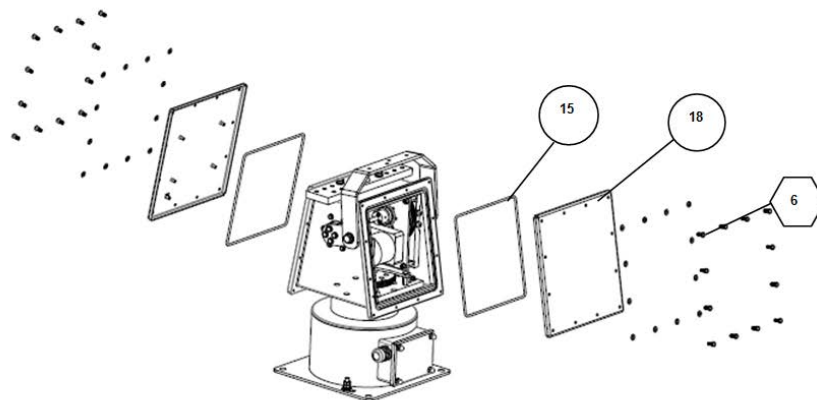
4. Remove the screw M10x20 (PosNo.5) with washer (one per side).
5. Remove the stroke fork (PosNo.8).
6. Remove the eight (8) screws M6x20 (PosNo.14) with washers.
7. Remove the stroke eccentric (PosNr.7).



NOTE

Note the position of the Limit Switch Pan (right and left).
Mark them on the Limit Switch Pan with R for right and L for left.

8. Disconnect the Limit Switch Pan connector.
9. Remove the four screws to fix the Limit Switch Pan.
10. Mount the new Limit Switch Pan in reverse order.



11. Clean the groove of the O-rings.
12. Insert the greased O-rings (with seawater-resistant grease- Cazar K1H) into the groove in the housing.
13. Place the covers on the housing and fasten them to the housing with the screws M5x12 (PosNo.6) and washers. The screws must be secured with Loctite 243.



NOTE

Loctite is only to be applied to the first two threads after the screw head.
When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.

14. Tighten the screws M5x12 (PosNo.6) with 4.65 Nm.
15. ✓ Exchanging Limit Switch Pan is done.

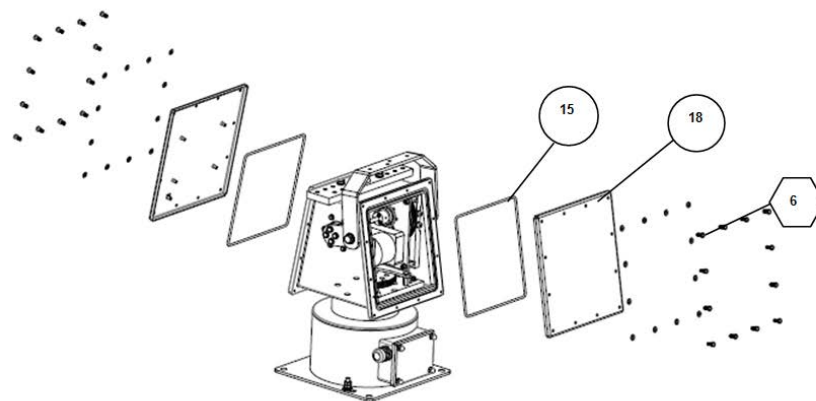
8.2.12 Limit Switch Tilt (V)



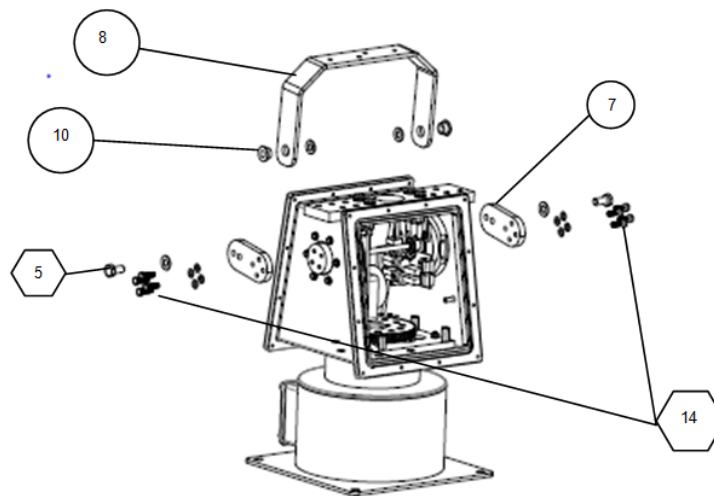
HAZARD	
<p>Danger to life by electric currents. Working on open circuits may cause short circuits and electric shocks through the body.</p> <ul style="list-style-type: none"> An electrician is required when working on electrical components. Make sure that the system is disconnected from the electrical connection. Secure the power supply against being switched on again. Cover open parts of other systems. If necessary, short-circuit the system components. Test whether the system is voltage-free. 	



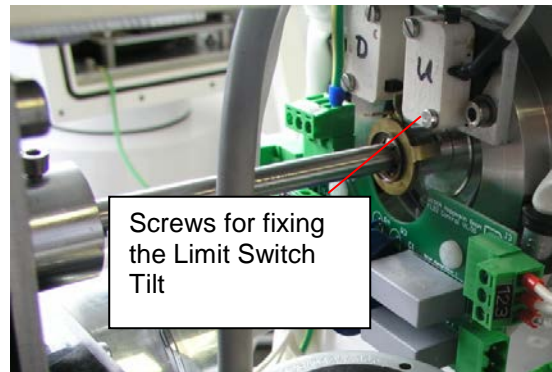
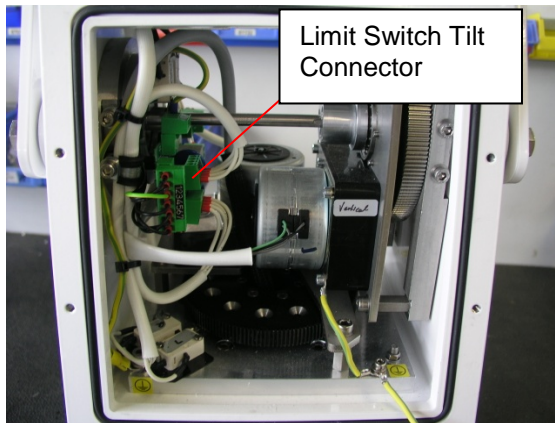
NOTE	
<p>Loctite should only be applied to the first two threads after the screw head. When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass. Consumers (e.g. searchlights) must be removed before installation. Make sure that no water enters the housing when the cover is open.</p>	



1. Remove the screws M5x12 (PosNo.6) with washers (twelve (12) screws per cover).
2. Remove the covers of the upper housing (PosNo.18).
3. Remove the O-rings (PosNo.15).



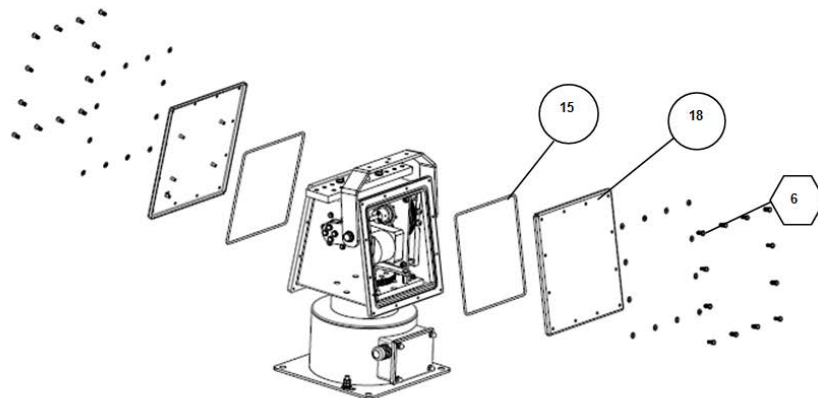
4. Remove the screw M10x20 (PosNo.5) with washer (one per side).
5. Remove the stroke fork (PosNo.8).
6. Remove the eight (8) screws M6x20 (PosNo.14) with washers.
7. Remove the stroke eccentric (PosNr.7).



NOTE

Note the order of the Limit Switch Tilt (up and down).
Mark this on the Limit Switch Tilt with U for up and D for down.

8. Remove the Limit Switch Tilt connector.
9. Remove the screws to fix the Limit Switch Tilt.
10. Mount the new Limit Switch Tilt in reverse order.



11. Clean the groove of the O-rings.
12. Insert the greased O-rings (with seawater-resistant grease- Cazar K1H) into the groove in the housing.
13. Place the covers on the housing and fasten them to the housing with the screws M5x12 (PosNo.6) and washers. The screws must be secured with Loctite 243.



NOTE

Loctite is only to be applied to the first two threads after the screw head. When tightening several screws to the same tightening torque, all screws must be tightened alternately to 2/3 of the correct tightening torque, and only then to the correct torque in a second pass.

14. Tighten the screws M5x12 (PosNo.6) with 4.65 Nm.
15. ✓ Exchanging Limit Switch Tilt is done.

8.3 Cleaning

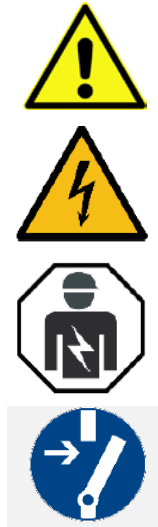
- If necessary, the drive must be cleaned from the outside. No liquids may penetrate into the interior of the device during cleaning.
- Detected rust spots must be removed by suitable means.
- In this context, the function of the movement mechanics must be checked.

9 Spare parts

9.1 Pan and tilt drive / Remote control unit RCU

No.	Designation	Art.-No.	Spare parts designation
Pan and tilt drive			
1	Motor Tilt + connection cable	22001025	SP-S-FL52 Motor Unit Tilt (V)
2	Motor Pan + connection cable	22001026	SP-S-FL52 Motor Unit Pan (H) 230VAC
3	Tracking bearing + end positions Switch	22001028	SP-S-FL52 Limit Switch Unit Tilt (V)
4	Pan gear wheel	22001029	SP-S-FL52 Pan gear wheel (H)
5	O-rings Cover and rubber seal E-room Upper housing	22001027	SP-S-FL52 Cover Seal Set
6	E-Circuit Board 230 VAC	22001030	SP-S-FL52 E-Circuit Board 230VAC
7	Limit Switch Pan (H)	22001031	SP-S-FL52 Limit Switch Pan (H)
8	Limit Switch Tilt (V)	22001032	SP-S-FL52 Limit Switch Tilt (V) 230VAC
9	Motor Plate Tilt (V)	22001033	SP-S-FL52 Motor Plate Tilt (V) 230VAC
10	Interne Control Cable	22001034	SP-S-FL52 Interne Control Cable 7G1.0

10 Disposal and decommissioning



HAZARD

Danger to life by electric currents.

Working on open circuits may cause short circuits and electric shocks through the body.

- An electrician is required when working on electrical components.
- Make sure that the system is disconnected from the electrical connection.
- Secure the power supply against being switched on again.
- Cover open parts of other systems.
- If necessary, short-circuit the system components.
- Test whether the system is voltage-free.

10.1 Disposal

Observe all local and national laws, guidelines and regulations regarding the disposal of materials and products.

In case of doubt, ask the manufacturer whether or not he will accept returned products manufactured by him for disposal and recycling.

10.2 Decommissioning

Proceed as follows to decommission the product or take it out of service:

1. Follow the safety and warning information on the product and in the associated documentation.
2. Turn off the product.
3. Disconnect the product from the power grid.
4. Dismount the product/system parts that are to be decommissioned.
5. Re-use the dismantled system parts or recycle them.
6. ✓ The system or the system part is decommissioned.

10.3 Storage

To store the product, the individual components must be dismantled.

The dismantled components must be packed and protected against moisture and external damage.

The components must be marked for better assignment.

Stored components must be checked at regular intervals for completeness and proper condition.

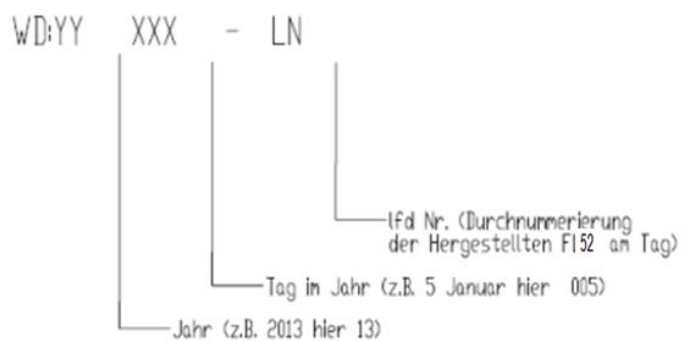
11 Technical data

11.1 Technical data

Pan and Tilt drive FL51	
Pan and Tilt drive made of stainless steel	
Standby-heater	Option
Connecting cable	3m
Power input	80 W (with optional heater 220W)
Horizontal rotation	185°/-185°, 2°/s
Vertical tilt	+30° /-30°, 1,2°/s
Load capacity for payload	35 kg with fork system
Height drive (without shaft)	416 mm
Diameter bottom	max. 368 mm
Weight	42,6kg
Protection class	IP 56
Ambient temperature	25°C - +45°C (with optional heating - 55°C- +45°C)
Colour	RAL 9016

Technical data

11.2 Typkey



11.3 Typ label

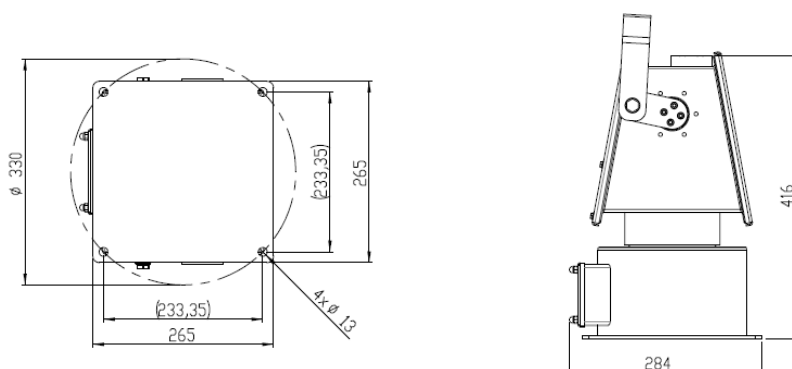


11.4 Protection class

IP 23	Protection against ingress of foreign bodies > 12mm Protection against light spray water
IP 56	Protection against dust deposits, protection against contact, protection against dust deposits inside Protection against strong jet water Protection against strong jet water from any angle.

11.5 Dimensions

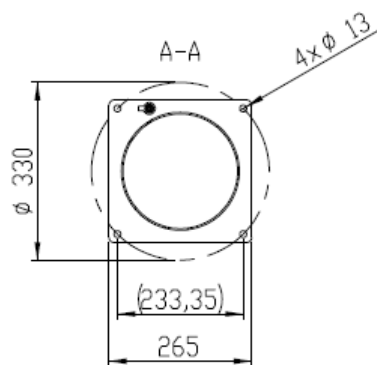
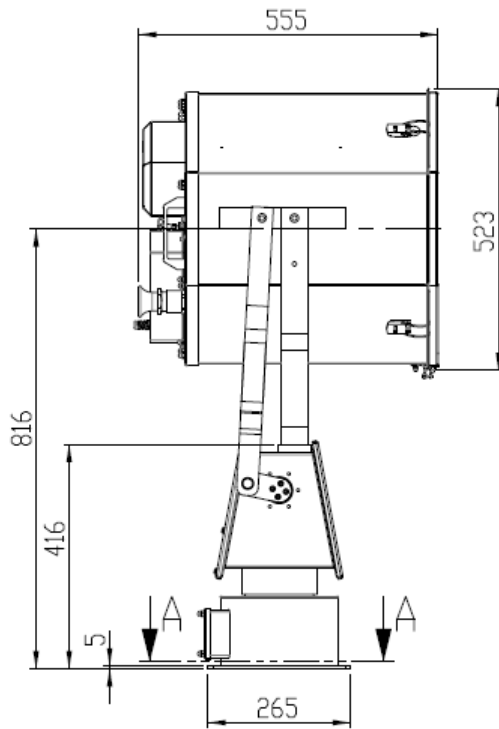
11.5.1 Pan and tilt drive FL52



Technical data

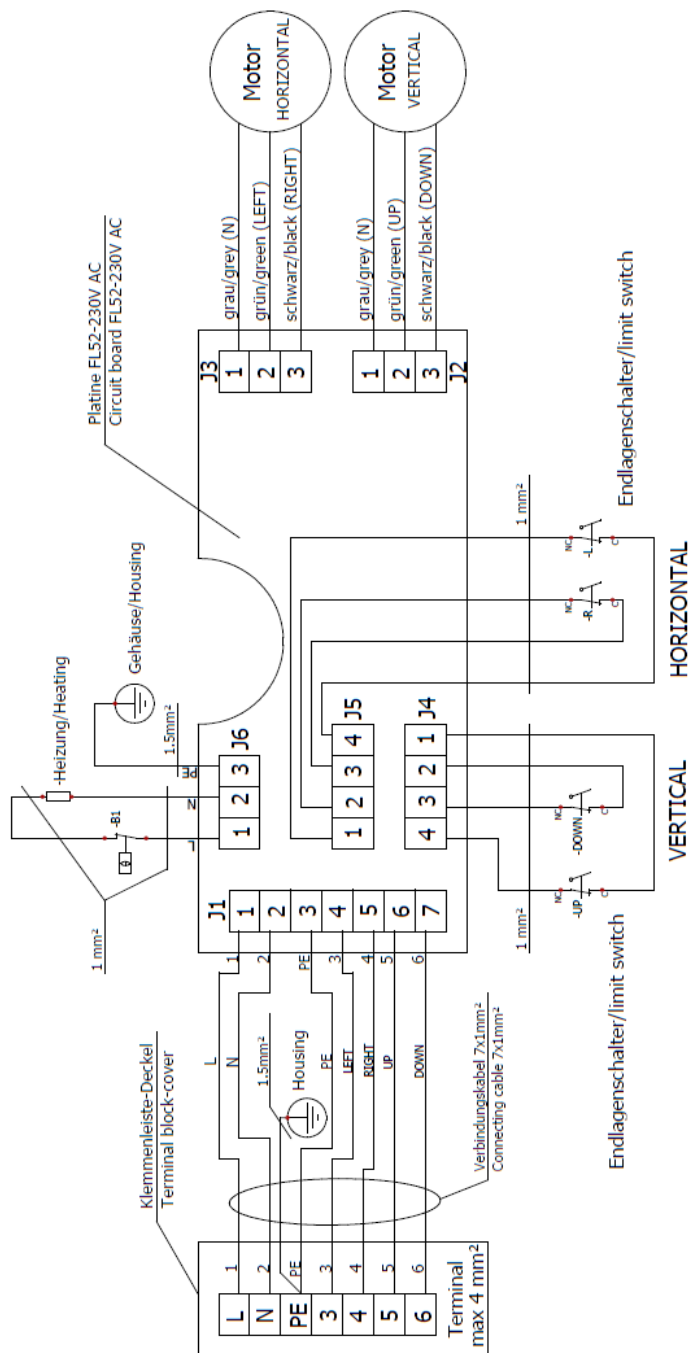
11.5.2 FL52 Dimension Sheet

Dimension Sheet FL52 required



11.6 Electrical connection diagram

11.6.1 Circuit diagram E-Gear FL52-230V



12 Supplier documentation and certificates

12.1 CE Declaration of Conformity

The corresponding CE Declaration of Conformity is enclosed separately with these instructions. Should this be lost, an up-to-date status can be viewed on the WISKA homepage:

<https://www.wiska.com/de/>

13 Keyword index

C		O	
CE Declaration of Conformity	12-1	Operation	6-1
Cleaning	8-52	O-Ring cover	8-5
D		P	
Dimension Sheet	11-4	Personal safety equipment	2-6
DIN EN ISO 12100	IV	Product overview	3-1
Disposal and decommissioning	10-1	Protection class	11-3
E		Q	
Electrical connection diagram	11-5	Qualification of users	2-3
Electrical connection values of the Remote Control Unit (RCU)	4-7	R	
Electrical installation	4-6	RCU	IV
Embedded safety information	2-3	Removal/ installation of parts of the FL52	8-4
EMV	2-3	Rubber seal in the E-room of the lower housing	8-7
F		S	
For your safety	2-1	Safety Information	1-2
G		Servicing	8-1
General safety information	2-1	Spare parts	9-1
H		Storage	10-2
Hazardous areas and danger points	2-4	Switch off	6-2
I		T	
IP 23	IV	Table of Abbreviations and Acronyms	IV
L		Technical components	3-2
Label und symbols	2-5	Technical data	11-1
M		Transport and lifting	4-4
Mechanical installation	4-5	W	
		Warranty	2-3

WISKA Hoppmann GmbH

Kisdorfer Weg 28
24568 Kaltenkirchen
Germany



+49 4191 – 508-0



+49 4191 – 508-209

contact@wiska.de
www.wiska.com